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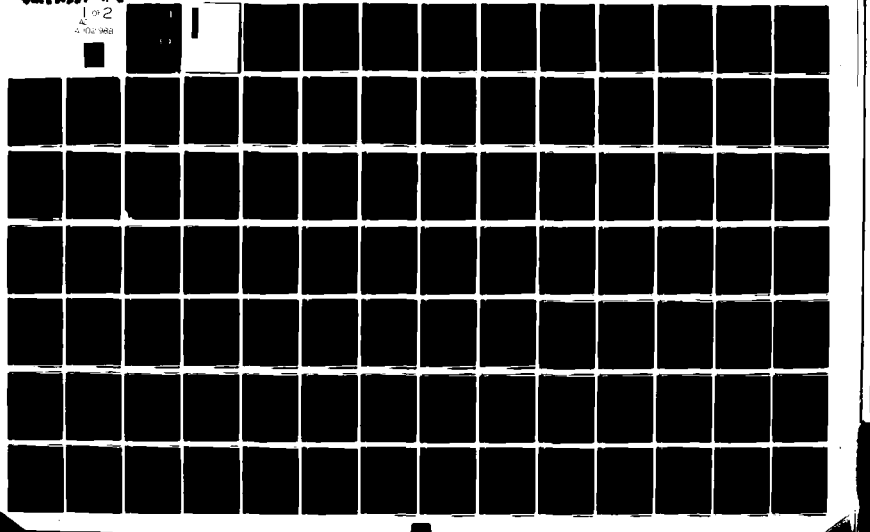

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OPERATIONAL EVALUATION OF SELF-PACED INSTRUCTION IN U. S. ARMY TRAINING

A Dissertation

Presented to the

Graduate Faculty of the

School of Human Behavior

United States International University

In Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

in Professional Psychology

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by

Jacklyn Erlin Hungerland

San Diego, 1979

OPERATIONAL EVALUATION OF SELF-PACED INSTRUCTION IN U. S. ARMY TRAINING

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Chairperson

August 15, 1979
Date

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J. E. H.

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Chapter 1

PROBLEM FORMULATION AND DEFINITION

The Department of Defense, including the U. S. Army, received 45% of the Federal Research and Development funds for Fiscal Year 1978 (National Science Foundation, 1977). The Army itself is one of the largest organizations in America and one of the most progressive in respect to innovation and change. Because of its interest in constructive change, the Army is concerned with the implementation of training innovations in the smoothest possible way. The Army is also invested in development of training programs that are self-sustaining and exportable--i.e., those programs that are implemented easily in locations other than those in which they were developed and tested (U. S. Army, 1973a) and those programs that provide reduction in training costs with concurrent maintenance or improvement in level of skill acquisition (U. S. Army, 1975).

The present study was conducted as a part of the Army's effort to institutionalize a training innovation (i.e., self-paced instruction in a job performance approach) in a systematic way, making use of prior research findings related to course development, implementation and the process of change. The study was conducted within the context of two training courses, one for Military Policemen and the other for Corrections Specialists, at Fort McClellan, Alabama.

Background of the Problem

During the 1970s the Army has pursued an extensive program of implementing the findings of training research and development to make its enlisted job training courses more job-skill related and more efficient. Early in this decade, the general principles of systems engineering (U. S. Army, 1973b) were implemented along with more specific prescriptions for converting the basic and advanced individual training bases from a classroom, lecture model to a performance-oriented one (Taylor et al., 1975; U. S. Army, 1973c).

At about mid-decade, a companion program was undertaken to modify the management of Military Occupational Specialty (MOS) producing courses to achieve greater efficiency. Under this program a number of courses were converted from a group, lock-step scheduling mode to an individualized, self-paced mode to allow for the greater accommodation of individual differences and reduce course training time and costs (cf Hungerland and Taylor, 1975; Brennan and Taylor, 1975). One of the courses receiving this developmental focus was that of the Military Policeman. A brief review of that developmental process follows.

During Fiscal Years (FY) 1973, 1974 and 1975, a prototype performance-oriented training program for one of the major job tasks selected from the Basic Law Enforcement Course (BLEC) was developed and the trial run of this course segment was successful (Suchman et al., 1976; Taylor et al., 1975). During FY 1976, another study was conducted to continue the conversion of the BLEC to a performance-oriented, self-paced mode; to develop an internal course monitoring system; and to conduct a field validation study of the preparedness of

BLEC graduates to perform entry level tasks at their first duty assignments (Suchman et al., 1976). The study demonstrated that the graduates of the new BLEC were rated by their first line supervisors and by themselves as "prepared" or "well prepared" to perform 41 of the 43 subtasks involved. While self-pacing had been an integral part of the previous work, it was within-module rather than between-module self-pacing.

Early in FY 1976, the Army, having become aware that its newly designed, innovative programs were not becoming institutionalized, took a position of command emphasis regarding self-pacing (U. S. Army, 1975). In response to this policy statement, the U. S. Army Military Police School (USAMPS) made a decision to proceed with full self-pacing of the Military Policeman course on its own. The effort did not meet with success, especially in regard to management (SITES, 1976).

During FY 1977, the current research was conducted to produce and test fully self-paced, criterion-referenced, performance-oriented courses for the entering Military Policeman and Corrections Specialist. The resultant courses were to serve as models for self-pacing other Military Police courses and were to be exportable to other training sites. To be exportable, the courses were not to rely on large investments in equipment, personnel or other resources. The courses also were to demonstrate ease of implementation and management--they must fit comfortably into the Army training system with a minimum amount of re-training of course administrative personnel and little, if any, modifications in existing facilities. The courses were to prepare the Military Policeman and the Corrections Specialist effectively for the performance of their jobs at the entry level.

Statement of the Problem

New Army training programs should be developed, tested and (if proven effective and erficient) implemented uniformly and smoothly in locations other than those in which the research and development took place. Integration of the results of research and development into the Army training system has had varying degrees of success. In one case, a dramatic innovation in training was successfully implemented at several locations and was also adapted to courses different from that in which the innovation had been tested (Weingarten et al., 1972). In another case, an innovation was successfully implemented at one location but was resisted and not implemented at another location (Hungerland and Taylor, 1975). The implementation approaches used in these two cases were quite different. However, the primary question remained of why new training programs were implemented with apparent ease under one set of circumstances and with difficulty and resistance under another set. The problem for the Army was how to develop and test innovative programs in a way that would facilitate both the process of change and the subsequent implementation of these programs.

Purpose of the Study

The purpose of the current study was to develop and evaluate self-paced courses for the Army's Military Policeman and Corrections Specialist. These experimental courses were developed and tested in a way that would maximize their instructional effectiveness and would at the same time facilitate their continuation and incorporation into the Army training system. In addition to course effectiveness relative to

the success of instructional techniques and materials, the flexibility required in the management of an individualized, self-paced approach to instruction was a key focus. More specifically, the major objectives of the study were to: 1) develop self-paced instructional systems for the Military Policeman and the Corrections Specialist with supporting management, monitoring and quality control documentation; 2) re-orient administrative and instructional staffs; 3) validate new materials via small group trials; 4) guide one operational iteration of each experimental course; 5) evaluate the effectiveness of the experimental courses in terms of performance, trainee time in course, and survey data regarding acceptance of the program by trainees and by course personnel and managers; and 6) assess the effectiveness of the systematic plan for the introduction of change.

Rationale of the Study

Development of the course structure and course materials assumed a systems approach and employed instructional principles derived from established cognitive and behavioral learning theories. Of particular importance was the incorporation of principles of individualized, self-paced, criterion-referenced instruction and testing previously applied and proven within the Army training system (Weingarten et al., 1972; Hungerland et al., 1974; Taylor et al., 1975; U. S. Army, 1973c).

Techniques of management for self-paced instruction relied on techniques previously proven effective in the context of Army training (Brennan and Taylor, 1975; Hungerland and Taylor, 1975; Suchman et al., 1976) and in the civilian sector (Hungerland et al., 1972).

Salient factors for facilitating institutional change that had evolved from prior research (Lyons, 1966; McClelland, 1968; Niehoff, 1967; Bushnell, 1972) were incorporated into the study. These factors included communication with the adopters of the innovation; a direct confrontation with the new system (for the adopters); direct involvement of the adopter in the development, testing and packaging of the innovation; and consultation and assistance provided to the adopter throughout the process of change.

The instructional systems for the two experimental courses were based on assumptions about the nature of human learning delineated by Suchman et al. (1975). These assumptions were:

1. That learning is an interactive process. The learner takes action in the context of an environment--his actions upon the environment and the environment's reactions are experienced by the learner as a whole pattern.

2. That learning is an active process. People learn by doing more so than being in a passive role.

3. That learning is an individualistic process. Each person has a unique style of learning, influenced by prior experiences, concepts and beliefs.

4. That learning is a self-directed process. The greater degree of control the learner has over the learning process, the more effective and efficient the learning will be.

5. That learning can be self-motivated under the appropriate conditions in which the process of learning can be made sufficiently rewarding in itself.

6. That the learning process tends to move most effectively

from the particular toward the general.

Suchman (1975·14) stated:

> Given a performance-based test to assure quality control, there is no reason why a student cannot be allowed to choose among alternative patterns for using learning resources, e.g., video tapes, audio tapes, slide-tape programs, practical exercises, peer instruction, etc. that fit his own learning characteristics and preferences. An additional advantage of "putting the learner in the driver's seat," as it were, is that he is encouraged to assume greater autonomy and become a more active learner.

The encouragement of autonomy and active participation in the learning process is the fundamental base of performance-oriented training. These elements are essential in self-paced instruction if trainees are to advance at their own rates--whether faster or slower than the norm. Generally, when trainees are given the opportunity to move through the training system faster, they will do so. There is also the other side of the coin--those trainees who can do the job, but need a little more time than most trainees to master the job tasks, are given that opportunity in a self-paced course.

Importance of the Study

Of critical importance in the study was whether the systematic development, evaluation, revision and operation of experimental courses could be accepted by Army personnel so that the process of course maintenance or revision (based on continued collection of data) could become a continuing, in-house process independent of outside intervention.

Assuming that: 1) the experimental courses of instruction proved to be effective in terms of skills acquired by the trainees and in terms of relative costs; 2) management techniques for conducting self-paced, individualized instruction proved effective; and 3) the

experimental courses proved to be as easy if not easier than the conventional courses to establish and operate, then the experimental courses should be accepted readily and should be phased into the Army training system without undue difficulty.

If the plan for the study, incorporating modern, effective instructional strategies and management techniques and factors purported to facilitate change, proved successful, the Army would have a tested model for systematically introducing and sustaining self-paced instruction in its training system.

Scope of the Study

The current study included evaluation of: 1) the feasibility of the experimental courses; 2) management techniques in self-paced courses; 3) the exportability of the experimental courses; and 4) acceptance of the experimental courses within the Army training context.

Criteria establishing the feasibility of the experimental courses were: 1) that trainees would complete the courses in 25% less time than trainees complete the conventional courses; 2) that this savings in time would produce savings in cost; and 3) that 80% of the trainees in the experimental courses would complete the courses.

Criteria for the evaluation of management techniques were: 1) that problems encountered during the first iterations of the experimental courses would be resolved by course personnel without difficulty; and 2) that personnel, facilities and equipment already on hand would be used efficiently.

The criteria of exportability of the experimental courses were: 1) that they would not rely on large initial or continuing

investments in equipment, personnel or facilities; and 2) that they would be self-contained to a degree that would allow them to be implemented, without outside assistance, in locations totally removed from the site of development.

Criteria indicating acceptance of the experimental courses were: 1) that course personnel would function effectively in the experimental courses; and 2) that opinion surveys comparing the experimental courses with the conventional courses would indicate favorability toward the experimental courses.

Factors that were not evaluated during the study included: 1) improvement of trainee performance in the experimental courses over that in the conventional courses; 2) relative performance of trainees of different measured aptitude levels; and 3) demographic differences in relation to trainee performance (e.g., age, sex, prior military experience or training, etc.). These factors were not deemed relevant in the study because: 1) the performance criterion for all trainees in the experimental courses was 100%, compared to a criterion of 70% in the conventional courses; 2) the experimental courses, being performance oriented, were appropriate for trainees at all aptitude levels; and 3) the trainees in the experimental courses were not selected, but were the total, normal Army input to the courses in a selected week.

Definitions

Definitions and discussion of performance-oriented training principles and of criterion-referenced testing are presented in Chapter 2. Definitions of instructional system components specific to the experimental courses are presented below.

Course Managers' Guides. Designed for facilitators and course managers, the Guides described the total course of instruction, instructional "tracks" in the course, the modules in each track, the individual stations in each module, methods of distributing trainees across the tracks and modules, the recommended sequence of activities and trainee flow through the course, and management "rules" (i.e., when to start out-processing procedures for trainees nearing course completion, how to keep trainee flow smooth, record keeping and use of trainees as role players).

Course Outlines. These Outlines were prepared for quick reference and listed all the modules and their stations, the required or available instructional and test materials, the responsibilities of the facilitator, and course management reminders. Special instructions for unusual segments of the courses were also included.

Criterion-referenced Performance Tests. Each test contained a complete list of all items of equipment and types of personnel required to conduct the test; provided procedural information on the administration of the test, including detailed information on how to establish and arrange the test situation; provided instructions to role players, including a description of the general role to be played and the kinds of information that should or should not be given to the trainee being examined; provided instructions to be read to the trainee, giving the functional job context of the test, a description of the task or actions to be performed, and the time allowed to complete the test; and provided a pass/fail checklist of all performance measures that had to be completed with 100% accuracy.

Facilitator. Anyone who helped a trainee to get through the

instructional system. The term was being introduced into Army training concepts to cover or describe a wide range of positions and activities within the system--instructors, module supervisors, peer instructors, drill sergeants.

Instructional "Track." Tracks were made up of single or multiple modules and were designed to be approximately equal in the time it would take trainees to complete the subject matter contained in the track so that rotation of trainees between tracks would be smooth and trainee load would be steady.

Job Programs. These Programs provided an integrated test of job skills at the task level within the job.

Learning Resources Lists. These lists identified, for each station in a module, the learning materials and resources that were available for that station, including the location and title of all relevant video tapes, slide-tape programs, support skill lesson books.

Lesson Books. Each lesson book included a cover sheet (indicating the title of the module and the numbers of the lesson books in that module, a description of the job duty covered in the lesson book. the task to be performed, and the conditions and standards of task performance); detailed information on how to perform the task and/or each of the performance measures listed on the test; a brief summary of the key points and procedures covered in the lesson book; and instructions and specifications for the performance of practical exercises.

Readiness Reviews. Trainees were not required to work on lessons for which they already possessed the skills to pass the test for the module. To assist the trainee in determining whether or not (s)he

was ready for the test, Readiness Reviews were developed for each lesson or module. These reviews were short, paper and pencil tests with the answers and a discussion provided. Reviews were entirely self-administered.

Student Control Records. Records of two different types were developed to control the administration of instruction and movement of trainees through the 95B course: the course control card (controlling the movement of trainees between tracks) and the student control card (controlling the movement of trainees between the modules and stations in a track). In the 95C course, a single Checklist was used to record trainee progress through the modules, stations and tests of the course.

Student Learning Guides. For each module, the Guide contained a complete list of the lesson books and tests for the module and gave general information to the trainee on how to proceed through the module. The guides provided an overview of the module content and the general approach to the instructional materials.

Support Skill Books These Books provided instruction on frequently used skills needed in one or more of the instructional modules.

Organization of the Remainder of the Dissertation

Chapter 2 presents a review of the literature relevant to the study. Chapter 3 outlines the methodology of the study. Chapter 4 presents the research findings and Chapter 5 presents a summary of the study, a discussion and the implications of the research results.

Chapter 2

REVIEW OF THE LITERATURE

The literature relevant to the current study encompasses more than just that which deals with self-paced or individualized instruction. Attitude formation and the much broader area of attitude change are also involved. It is only through an understanding of the factors that influence attitudes that the entire process of effecting change in an institutional setting such as the Army can be examined. The literature review presents a discussion of each of these areas: individualized instruction in the context of the U. S. Army; attitude formation and change; and the process of effecting change.

Individualized Instruction in the U. S. Army

For centuries, educational technology has focused its attention on instructional techniques, seeking some solution to the problems of teaching. New approaches to teaching have historically met with political interference or religious condemnation, which has set limits on innovation. As recently as the 19th Century, during the period of the use of the monitorial system developed by Joseph Lancaster (Salmon, 1904), an anxious parent complained to his pastor that he was convinced that evil magic was being used by the school because his son was making such rapid progress in arithmetic. Part of the "evil magic" which he feared was a combination of the use of assistant or demi-

instructors (monitors) and the grouping of students according to their abilities in each subject being taught. It is interesting that this same "evil magic" is at the forefront of "modern" instructional technology.

Webster defined "modern" as being ". . . of or characteristic of the present or recent time; hence, new fashioned." There seems to be little doubt that one would define as "modern" an instructional approach which is: geared to the developmental stage of the learner; is conducted in a functional context; has subject matter ordered from the simple to the complex with correlative texts and aids; presents the overall concept before concentrating on the component parts: encourages student participation early in the instructional block; recognizes the need for cultivating a positive learning environment and utilizing sympathetic and skilled instructors; and discourages the use of punishment for failure to learn. This approach, although it may seem modern, was propounded by Comenius in the 17th Century (Saettler, 1968). It is on this same set of instructional principles (individualized instruction) that the courses of instruction in the present study were based. A brief review of the history of individualized, performance-oriented training techniques in the context of the U. S. Army training system follows.

During the 1960s, the U. S. Army admitted to draft status 100,000 members of the population of lower aptitude who were characterized as "functional illiterates" on the basis of their Armed Forces Qualification Test scores. One major problem became the identification of instructional strategies that would reach the wide range of Army trainees effectively, even though they ranged in aptitude from these

functional illiterates to college graduates (McFann and Heyl, 1970). Taylor et al.(1970) reported research with this population which assessed the impact of aptitude differences on learning performance. Results indicated that trainees of high aptitude level did better when left without a structured training program; trainees of middle aptitude were able to work at their own speed; and the low aptitude trainees required a completely structured program in which the instructional sequence was kept to small steps presented on an elementary language level. The problem of identifying one instructional approach that would be satisfactory for these different aptitude levels remained.

One effective model was developed which incorporated instructional strategies to meet the diverse needs of hetero-aptitudinal training populations, combined these strategies into a complete training system, and tested a prototype of the system within the realistic constraints of a typical Army training course (Weingarten et al., 1972). Results indicated that trainees of all aptitude levels achieved greater proficiency with a lower rate of academic attrition and a significant savings in cost over the then-conventional training approach. The instructional principles that formed the basis for that successful model and which were used in the present study were:

Performance orientation. A clear specification of what the trainee was expected to learn to perform his job adequately was made. The trainee must actively participate in the training process, performing tasks rather than hearing or reading about them (such as in a lecture-centered or programed instructional approach). The evaluation of proficiency focuses on the student's ability to perform the various tasks that make up the job rather than on his ability to answer

questions about the tasks.

Learning in a functional context. Learning of skills to be applied in particular circumstances is accomplished by having those circumstances present in the learning situation. This avoids an undesirable temporal separation of receiving information and putting the information into practice.

Individualized instruction. Instruction is presented on an individualized, self-paced basis.

Absolute criterion. Accuracy of 100% is required on tests of all necessary job skills.

Feedback to the student and to the instructional manager. Rapid and detailed feedback is provided to trainees at each step of the learning process. Immediate feedback to managers permits modifications of instruction to preclude misunderstanding and mislearning and the resultant waste of time and loss of motivation.

Quality control. Measures instituted for assuring that the stipulated objectives of the system are being attained.

These six principles formed the foundation for the performance-oriented training approach adopted by the U. S. Army during the early 1970s (cf Taylor et al., 1975; U. S. Army, 1973c). Other methods of systems engineering were based on similar, behavioral approaches to training and testing (U. S. Navy, 1975; Mager, 1962).

In this behavioral approach, the criterion-referenced performance test is a checklist of behaviors (procedural steps) required to perform the specific task or subtask. The conditions under which the behaviors are to be performed are as nearly like the job setting as possible. Criteria for performance are stated in terms of time and

accuracy. Time limits are generally defined as the expected length of time a person at a given level of proficiency (beginner, intermediate, advanced) might use to perform the task correctly. Accuracy is generally set at 100%, since a lesser criterion would lead to degradation of the instructional system or diminished job performance expectancies (Weingarten, et al., 1972). Once the performance test is defined, the instruction is based on the test-as-terminal-objectives. These behavioral objectives, known in advance to the student, are useful preinstructional strategies, no matter what the teaching strategy, task or learner characteristics (Hartley and Davies, 1976).

Behaviorally derived instructional systems become reproducible sequences of instructional events producing a measurable and consistent effect on the behavior of each student (Markle, 1967). An analysis of curriculum development procedures used in the Army, Air Force and Navy (Hunter et al., 1969) produced a model with the following steps: 1) analyze the system; 2) develop task inventories; 3) develop a job model; 4) analyze its tasks; 5) derive training objectives; 6) develop the training program; and 7) monitor the trained product and modify the curriculum. This study clarified the need for careful specification of course content, clearer specification of performance requirements for graduates and establishment of a feedback loop relative to job performance of graduates.

In general, educators have attributed instructional failures to deficiencies in the learner rather than to inadequacies in their instructional techniques. As a result of developments in the field of programed instruction (Hennig and Erickson, 1970), attention to failure began to focus on the learning program rather than the learner. In

order to reach a wider population with validated instructional materials, instructional product development (primarily centered on behavioral objectives and criterion-referenced testing) became a popular activity for the receipt of research funding (Hennig and Erickson, 1970).

Ericksen (1964) and Mosel (1964) recognized the seemingly unbridgeable gap between theories of learning and applicability of the theory in the actual teaching situation. Their conclusions paralleled the identification of principles outlined in the performance-oriented approach (Weingarten et al., 1972).

Learning theory and instructional theory are, however, quite different. Glaser (1976:4) made a precise distinction between learning theory and instructional theory.

> a theory of learning is descriptive, whereas a theory of instruction is prescriptive in the sense that it sets forth rules specifying the most effective way to achieve knowledge or mastery of skills. A theory of learning describes, after the fact, the conditions under which some competence is acquired. A theory of instruction is a normative theory in that it sets up criteria of performance and then specifies the conditions required for meeting them.

The prescriptive theory requires four components for the design of instructional systems (Glaser, 1976:8).

> (a) analysis of the competence, the state of knowledge and skill to be achieved; (b) description of the initial state with which learning begins; (c) conditions that can be implemented to bring about change from the initial state of the learner to the state described as competence; and (d) assessment procedures for determining the immediate and long-range outcomes of the conditions that are put into effect to implement change from the initial state of competence to further development.

Over the past two decades, then, the trend has been toward an instructional approach that represents "real world" process more than a research/theoretical base, although the latter is not ignored in the

development of the former. This realistic approach to training became the focus of interest for Army training programs.

In the context of the present study, "individualization" of instruction and self-pacing do not imply programed instruction. With the performance context of training and testing dictated by the principles described earlier, actual performance of job tasks and subtasks was the requirement, rather than reliance on responses about the performance of tasks or subtasks.

Programed instruction is expensive to develop and maintain. When any modification is needed, no matter how minor, the changed text must be validated, generating additional costs in terms of time and materials. Computer-assisted instruction (CAI) is even more costly, requiring the development of instructional materials and an investment in hardware (such as computers, TV display/feedback machines, etc.). Even though CAI is effective for certain populations, one of its major developers (Suppes) has taken the position that it is not feasible for general application (Silberman, 1970:187-188). There are two additional factors that are most pertinent for the present discussion: 1) programed instruction places an inordinate reliance on reading ability; and 2) CAI, with its hardware support requirements, is not economically feasible for dissemination to a wide variety of locations. These two points made the use of programed instruction and CAI unacceptable for the Army's purposes in introducing self-pacing or individualization of instruction.

The performance-oriented model described earlier has several advantages over programed instruction or CAI. Its development and maintenance costs are low; it places little emphasis on reading and is,

therefore, effective for people at the lower end of the aptitude spectrum; it sets an absolute criterion; and all training results (i.e., task performance) are quantifiable and can be evaluated on a pass/fail basis. The one drawback to the model was that it did not allow a faster learner to proceed at his own rate through the instructional system. Nor did the model allow a student to enter the system at the place indicated by his previously acquired skills.

Rather than this type of linear model, what was needed was an open access, open exit model which the student could enter or leave at any time without disrupting the smooth flow and operation of the instructional system. The major concern regarding such a system was management, especially in courses (such as the Army training courses) that had large numbers of students entering the course on a weekly basis. How could these students be distributed evenly over the course structure initially and then be allowed to proceed through the instruction as quickly as they were able? Will slower learners require an inordinate amount of time to master the course objectives? What happens if a large number of students arrives at one segment of the course at the same time, creating a potential "bottleneck?"

Answers to these questions had been identified in a model developed and tested in the context of office education (Hungerland et al., 1972). In that model, flexible managerial capabilities were established within the system, allowing for efficient use of facilities and equipment and precluding the need for additional expenditures in that direction. In addition, ease of management allowed for adjusting the system to accommodate increases or decreases in numbers of students and in type and depth of curriculum. This model, having come

to the attention of Army training developers (U. S. Army, 1973b; 1975), was tested in the Army training context (Brennan and Taylor, 1975; Hungerland and Taylor, 1975). The model p oved to be feasible within the Army training context and was subsequently designated as one of the models on which self-paced instruction in the Army would be based (U. S. Army, 1975). This self-paced, managerially flexible model was used as the foundation for development of the two courses of instruction evaluated in the present study.

Earlier in this decade, Illich (1970:70) pointed out that

> operational research now seeks to optimize the efficiency of an inherited framework . . . (which) . . . has the syntactic structure of a funnel for teaching packages. The syntactic alternative to it is an educational network or web for the autonomous assembly of resources under the personal control of each learner. . . . If research were to focus on it, this would constitute a true scientific revolution.

Illich addressed the need for the development of innovative approaches to instruction. Once developed and tested, the dissemination of innovation meets very different challenges. The next section reviews some of the issues related to resistance to change and to the effective introduction of change.

Attitude Formation and Change

That attitudes are forged out of previous experience is probably one of the least controversial issues in American social psychology. There is enough disagreement about exactly what attitude is, however, that Kiesler (1969) presented a survey of definitions of attitude. The most pertinent of these follow.

1. Attitude is an enduring organization of motivational, emotional, perceptual and cognitive processes with respect to some

aspect of the individual's world.

2. Attitude is the intensity of positive or negative affect for or against a psychological object (any symbol, person, phrase, slogan or idea toward which people can differ as regards positive or negative affect).

3. A social attitude is, or is evidenced by, consistency in response to social objects.

4. The content of an attitude is determined by the responses which constitute it.

5. The distinction between attitude and opinion further complicates the issue: opinions are overt expressions of covert attitudes and attitude should be defined as a general orientation and opinion as the more specific manifestation of the attitude.

6. An attitude response is a kind of behavior. The fact that existing attitudes relate to overt behavior does not indicate whether or not an attitude change brought about by exposure to a persuasive communication will be reflected in a change in subsequent behavior.

7. A functional definition of attitude is as the needs, interests and aversions of a person that define for him the environment with which he must interact (i.e., behave).

Cohen (1964) took this theme slightly further and said that attitudes are evaluative predispositions and that they have consequences for the way people act toward others--that attitudes are determinants of how a person will actually behave in his daily affairs. Cohen also presented a psychoanalytic definition of attitude as, possibly, the expression of a defense mechanism or, if it also

incorporated within itself some expression of the rejected motive, as a type of symptom.

In all of these definitions, it appears that attitudes remain a mixture of things that are measured or evaluated on the basis of a person's behavior.

In addressing the issues related to attitude change, the issues related to attitude formation are also addressed. The difference is that studies in attitude change (essentially prescriptive in nature) provide the most valuable information for proscriptive measures that might be applied to attitude formation. Cohen (1964) discussed several areas in need of further investigation. A summary of these areas follows.

1. One critical issue in understanding attitude change is the degree to which outer conformity to persuasive appeals is transformed into inner change and the conditions under which this transformation will occur. People often conform outwardly without any internalization of change. There are three major cognitive models of attitude change. The congruity model (Osgood and Tannenbaum, 1955) focuses on the links between sources toward which one has an attitude and objects toward which one has an attitude. When assertions made by persuasive communications produce incongruous relationships between sources and objects, attitudes change (in the direction of increased congruity depending upon the sign and extremity of the initial attitudes toward the two members of the linked pair). The balance model (Krech et al., 1962) asserts that if people seek balance between their beliefs and their feelings about objects, then their attitudes can be changed by modifying either the beliefs or the feelings. The cognitive dissonance

model (Festinger, 1957) professes that people will seek to resolve dissonance by altering their attitudes or beliefs. Dissonance is psychological tension having motivational characteristics. Dissonance exists when a person possesses one attitude or belief that follows from the obverse of another attitude or belief, but is not implied by the other. For example, if A implies B, then holding A and not B produces dissonance.

2. Persuasive communications may arouse conflicts between an individual's original motives for holding a given attitude and the motives aroused by the new incentives offered by the communication. There is a need, however, to look at theory relating to different kinds of conflict.

3. In the area of attitudinal persistence, certain delayed attitudinal effects are explained by the absence of the original communicator as a cue for acceptance or rejection. This leads to a splitting of source from content--those who originally change most show a considerable decay, while those who change less show an increment. Reminding the person of the source tends to prolong the change over time.

4. Pre-exposure (inoculation/immunization) to a weakened form of counterarguments or to some other belief-threatening material strong enough to stimulate, but not so strong as to overcome a person's defenses against belief will foster persistence of change as well as facilitate change initially.

Cohen (1964) further outlined some factors affecting persuasibility: perceptual dependence (a person whose perceptions of physical stimuli are affected by the surrounding environmental field

is more susceptible to persuasive communication); authoritarianism (excessive respect for and obedience to authority, admiration for power, toughness and aggression, and an attitude of cynicism and defensive projection produce greater acceptance of persuasive communications); other-directedness (a value system that emphasizes group adaptation and conformity will lead to more persuasibility); social isolation (isolation produces a higher value on social acceptance, accentuates an agreement-seeking process and leads to greater persuasibility); richness of fantasy (more fantasy produces more anticipation of rewards or punishments and, therefore, more receptivity to persuasive communication); and sex (women are culturally attuned to being more susceptible to persuasion).

Persuasibility is a generic term which refers to any general tendency to respond positively, regardless of how such a tendency may have arisen. The social group to which a person belongs is an important source of social approval/disapproval and the expectation (for approval) which affects attitude change.

One important factor in the process of change is the amount of change advocated by the communicator. Under conditions where there is some ambiguity about the credibility of the communicator, the greater the attempt at change, the higher the resistance. McGuire's work (1969) addressed the fostering of resistance. McGuire stated that many studies that are nominally investigations of attitude change are inadvertently means of inducing resistance to change and that we can train people to resist persuasion. Enhancement of self esteem comes nearest to making a person resistant to the change toward any side of all issues or as a panacea against persuasion. Inducing

aggressiveness tends to make the person less susceptible to benevolent appeals, but more vulnerable to malevolent ones. The most committing behavior is for the person to make a public announcement and then follow it up with some sort of action. The new belief should be linked to other cognitions--valued goals, other beliefs, or positively valenced sources and reference groups.

With respected communicators, however, the greater the discrepancy between the subject's position and the one advocated, the greater the change. Communicator credibility is one of the most important factors in the process of change--who says something is as important as what is said; how the listener perceives the communicator can affect the change. Hovland et al. (1953) expanded further on the role of the communicator in persuasion. If the communicator has a striking or charismatic personality or has high status in the group, his message is more likely to be accepted. An appearance of expertness enhances the communicator's credibility.

Studies of the effects of order of presentation of a communication indicated that a two sided communication is better than a one sided message (Cohen, 1964). Degree of public commitment was another significant factor. The effect of public commitment to an idea is due to social rewards and the need for social approval. Having gone on record, the subject feels he cannot alter his views if he is to be regarded as consistent and honest by those with whom he expects to interact. If the communicator first arouses the subject's perception of need and then presents information that tends to satisfy that need, the information will be accepted more readily than if the reverse course is taken. In a parallel sense, attitudes change more when

communications highly desirable to the subject are presented first, followed by the less desirable ones. Also, when major arguments are presented at the beginning of the communication, followed by lesser arguments, the audience's attention is gained and communication is more effective. Emotional appeals (fear-arousing or threatening) are likely to foster resistance. In some cases, acceptance of the arousing communication is the equivalent of an aggressive act.

In summary, the attitudes underlying the effects of persuasive communication include: affection and admiration for the communicator; fear and awe of him; trust and confidence in his sincerity, fairness and credibility. To be persuasive, a communication must get the attention of the audience, must teach the audience something and must then be accepted by the audience.

The discussion so far has focused on the theory of attitude change. Most relevant to the current study were the issues related to the process of institutional change. These issues are discussed in the following section.

The Process of Effecting Institutional Change

The process by which a new idea or practice is transferred to a group by means of a change agent has been studied with increasing precision in the last 15 years. In a study of 203 anthropological case histories of efforts to introduce innovations, Niehoff (1967) isolated four major strategies that influence the process: adaptation to local cultural patterns, utilization of local leadership, utilization of positive motivation and establishment of effective communication. Niehoff hypothesized that if all four of these innovation

techniques were present in a given change project, there was an 80-90% probability of adoption of the new practice or idea. Communication was seen as being absolutely critical. Three types of relevant communication were cited: input (the movement of information from the change agent to the potential adopter), feedback (the response from the potential adopter back to the change agent); and gossip (intra-group communication among the potential adopters regarding the innovation). Gossip was shown to be a powerful force in the process of decision-making in small groups and was found to be significant to induced change projects.

In a later work, Niehoft and Anderson (1968:2-3) characterized the process of change as

> the introduction of an idea or a technique into another society, during which time there are two principal forces in operation. One force is the behavior of the change agent . . . the other force is the behavior of the recipients, which can be viewed as the reaction brought about by the change agent's action.

Acceptance of an idea is demonstrated when the idea has been integrated into the society's cultural patterns. Rejection of a new idea can take place at any time during the change process.

Translating research findings to implementation or utilization parallels the introduction of new ideas or techniques into a special sub-culture (i.e., the population for whom the new idea is relevant). Lyons (1966) cited some of the characteristics of research products successfully implemented in the U. S. Army: 1) timeliness (the product filled a recognized gap); 2) command interest (a strong operational interest at top management and working levels); 3) the end product was specifically engineered for a given situation, requiring little effort to adapt it to the operational setting; 4) a material item was

provided (such as a training device, user handbook, lesson plan); 5) the innovation was not excessively novel, or had been used or accepted by some other institution; and 6) the product was promoted by the research agency. Of particular importance were characteristics of unsuccessful implementation efforts: 1) poor communication regarding the validity and operational value of the product; 2) lack of timeliness; 3) the change was too drastic; 4) lack of command interest or support; 5) non-availability of funds and personnel to effect the change; 6) lack of doctrine under which to fit a new or improved training or operational capability; 7) lack of promotion by the research agency; and 8) the product was perceived to attack "current practices, individual competence, sacred cows, tradition, or long-accepted doctrine" (Lyons, 1966:6).

In a comprehensive survey of the state-of-the-art of the process of effecting change, McClelland (1968) cited the works of Rogers (1962; 1966; 1968) and Guba (1968), which were especially relevant to the present discussion. The key elements in diffusion of innovation, according to Rogers, were: the innovation itself, communication, the social system, and time. Rogers' views regarding the characteristics of innovations that affect the rate of adoption were also summarized. These included: the relative advantage of the innovation (the degree to which it is perceived as better than that which it supersedes); the compatibility of the innovation with the existing values and past experiences of the adopter; the degree to which the innovation may be adopted on a limited basis; and the degree to which the innovation is relatively difficult (or easy) to understand and use.

Both McClelland (1968) and Lavisky (1969) summarized Guba's (1968) characteristics of the adopter of an innovation: that he is a rational entity who can be convinced; an untrained entity who can be taught; a psychological entity who can be persuaded; an economic entity who can be rewarded or deprived; a political entity who can be influenced; a bureaucratic functionary who can be compelled; or a professional who can be professionally obligated. The techniques Guba outlined that can be used in reaching potential adopters of an innovation were: tell (by written or spoken communication); show (provide direct confrontation with the phenomena of interest); help (provide direct involvement of the change agent in the affairs of the adopter, on the adopter's terms--consultation, service, trouble-shooting, etc.); involve (enlist the adopter in the development, testing, or packaging of the innovation); train (familiarize the adopter with the proposed innovation, help him increase his skills, change his attitudes); and intervene (insert control mechanisms, mandate certain actions).

Tying these factors together, McClelland (1972) and Bushnell (1974) suggested six steps for systematically implementing change in the institutional setting: 1) diagnose/diagram the problem; 2) formulate objectives and criteria of effectiveness; 3) identify constraints and needed resources; 4) select potential solutions; 5) evaluate the alternative solutions; and 6) implement the selected alternative(s).

Summary

The preceding review of the literature in the areas of individualized instruction and institutional change has not been

exhaustive. Selections were chosen on the basis of their general import and their relevance in establishing an historical framework for the content of the present study.

Instructional technology has been moving toward a "real world," operational approach rather than a strictly theoretical construct (Ericksen, 1964; Mosel, 1964; Weingarten et al., 1972; Glaser, 1976). In particular, the U. S. Army has increasingly provided operational settings for the evaluation of innovative instructional programs, with special emphasis on task-oriented, exportable, individualized instructional approaches (U. S. Army, 1973b, 1975; Brennan and Taylor, 1975; Hungerland and Taylor, 1975).

Once developed and evaluated in the operational setting, implementation of innovative courses presents a unique set of problems. According to Lyons (1966), such innovations will be implemented successfully if they are timely, have command interest and support, are operationally feasible, have supporting documentation, are not excessively novel, and are promoted by the research agency. Rogers (1962, 1966, 1968) supports this view, adding that the innovation must have advantages for the adopter, be compatible with the setting and the adopter, be flexible, and be easy to understand and use.

Six steps for systematically implementing change were outlined (McClelland, 1972; Bushnell, 1974): 1) diagnose/diagram the problem; 2) formulate objectives and criteria of effectiveness; 3) identify constraints and resources; 4) select potential solutions; 5) evaluate alternative solutions; and 6) implement the selected alternative. In the process of effecting the implementation, the adopter, according to

Guba (1968), must be told about and shown the innovation, he must be involved in the process and helped to effect the change, he must be trained in the use of the innovation and he must have structure for the implementation.

The literature indicated that if an instructional innovation was task-oriented, timely, flexible and feasible and if the adopter was involved appropriately in the development and operational evaluation, the implementation of the innovation would be facilitated.

Chapter 3

METHODS OF RESEARCH

The purpose of this chapter is to present the methods and procedures used in this study. The major areas of effort were the development and validation of course materials, the re-orientation of instructional and managerial staff, the guiding of one iteration of each course, and the on-going refinement and adjustment of managerial techniques.

Research Approach

A quasi-experimental approach was used for the evaluation of the two experimental courses. Task lists for the two jobs represented by the courses were finalized and job tasks were clustered into relevant job duty positions. The task clustering served to identify the appropriate modules of instruction. Procedural steps required to perform each of the identified job tasks or duties were then defined and these steps were the basis for development of the criterion-referenced tests. Standards and conditions for each test were then determined on the basis of USAMPS input. Instructional materials were developed, using the criterion-referenced tests as terminal objectives. As instructional materials and tests were developed, they were validated on-site with trainees who were representative of the target population.

An orientation program for facilitators was developed,

validated and delivered to USAMPS for use with all facilitators who were to be involved with the experimental course iterations.

Following these activities, the two experimental courses were operated concurrently with the conventional courses. At the start of the initial training week for each of the experimental classes, the classes were designated to undergo the experimental training. They proceeded through the courses in a self-paced mode, using the experimental instructional materials and being required to pass the (100%) criterion-referenced tests.

As trainees progressed through the courses, records of their performance were kept on an individual basis, including their test performance, time in each module and time to graduation (time in course). Records of academic failures were also tabulated. As each trainee graduated from the experimental courses, (s)he was asked to complete an opinion survey that covered performance-oriented and self-paced aspects of the courses as well as asking (open-ended) for their impressions of/comments about the courses they had just completed.

Throughout the experiment, USAMPS course personnel and managers were actively involved in the process--in the finalization of task lists, task clustering, development and validation of tests and instructional materials, and the actual operation of the first iterations of the experimental courses. Toward the end of the first iterations, these course personnel and managers were asked (by means of an opinion survey) to compare elements of the experimental courses with the conventional courses (with which they were familiar). They were also asked to express their opinions as to the job preparedness of trainees completing the experimental courses as compared to that

of trainees completing the conventional courses. Daily contact was maintained with the course personnel.

A civilian project officer was assigned as liaison bet"een the researcher and USAMPS.

Research Design and Procedures

The research design employed experimental and control groups, posttest only with non-random groups. The design dealt with the six major areas identified as objectives in Chapter 1. Following is a discussion of the design in each of those six areas.

Development of Instructional Systems

The research design called for development of the experimental courses as a joint effort involving the researcher and subject matter experts and course managers from USAMPS. The courses were developed formatively, with small group trials of all instructional and testing materials. Expertise in instructional technology was provided by the researcher; content expertise was provided by subject matter experts at USAMPS. The courses followed the principles of performance-oriented training (Taylor et al., 1975) and the principles and practices of self-pacing previously tested in the Army training system (Brennan and Taylor, 1975; Hungerland and Taylor, 1975; Suchman et al., 1976).

Major developmental steps included: 1) definition of course content and structure (including development of course task lists, task clustering and identification of the major areas of instruction and the sequence of instructional modules for each course); 2) develop-

ment of self-paced instructional module components (including learning guides, lesson books, readiness reviews, criterion-referenced tests, job programs and audio-visual tape scripts); and 3) development of course management and trainee control materials and procedures (including the course managers' guides, course outlines, trainee control records and lists of learning resources).

Definition of experimental course structures. As a result of the task identification and task clustering, the major areas of instruction defined for the experimental 95B course were as follows: Ethics, Professionalism, MP Image (including Community Relations); Unarmed Self Defense; Weapons Training; Operate a Law Enforcement Vehicle; Crime Scenes; Other Incidents; Traffic Control; Traffic Accident Investigation; Physical Security; and Combat Operations. Two areas of instruction that had been provided in the conventional 95B course were, for the most part, eliminated. These were Military Law and Identify Drugs and Drug Offenders. Portions of these two instructional areas that were included in the task list for the experimental course were integrated with the instruction in other modules where their use was relevant to the job context.

In a similar way, the major areas of instruction that were defined for the experimental 95C course were: History of Corrections; Legal Aspects of Corrections; Interpersonal Communications; Weapons Training; Day in Confinement; Receive and Process; Movement and Control; and Maintain Security. This course content represented major changes from the content provided in the conventional course. In the conventional course, trainees were required to go through a

common base of instruction with the 95B trainees, including content related to Military Law, Unarmed Self Defense, Identify Drugs and Drug Offenders, and Investigate an Incident. These skills were found to be irrelevant to the job duties of the Corrections Specialist and were, therefore, eliminated from the content of the experimental course. Where individual skills from these content areas were found to be relevant to the 95C job, instruction in the experimental course was integrated in the appropriate job context.

For safety reasons, all Weapons Training (for both experimental courses) and the training in Driving and in Unarmed Self Defense (for 95B) were conducted in the conventional manner. In the 95C course, History of Corrections, Legal Aspects of Corrections and a mini-course on Interpersonal Communications were conducted in the conventional, group-paced manner.

Experimental course materials. Wherever possible, existing, conventional course materials were used in the experimental courses. In most cases, however, existing materials required modification to reflect changes that had been made in the task lists. In the 95C experimental course, almost all of the instructional and test materials were newly developed in order to provide for performance-oriented training and criterion-referenced testing, which were practically non-existent in the conventional course.

Because of changes in the task lists or the lack of an absolute performance criterion, it was necessary to develop criterion-referenced tests for the majority of the tasks in both courses. All of the criterion-referenced tests were designed to simulate the functional

job context as much as possible considering feasibility and cost-effectiveness.

Two comprehensive practical exercises from the conventional 95B course were adapted to serve as job programs for the experimental 95B course. One was a night patrol exercise in an MP vehicle, the other was a three day field exercise including those job tasks that are performed in a combat environment.

The job programs for the experimental 95C course consisted of application of job skills in a mock confinement facility on the post. Each job program was designed to be performed for a specified time period to insure that a representative set of job skills would be performed by each trainee and also to insure that trainees did not get delayed in a job program merely for the purpose of serving as training support (i.e., as a role player).

Since learning styles and abilities vary considerably in any group of trainees, several different ways of communicating information were utilized to maximize the effectiveness of the instruction in the experimental courses. The instructional materials included the use of still pictures, printed material, slide/tape programs, TV tapes and live demonstrations. The components of each instructional module were as follows: 1) student learning guides which provided the trainees with an overview of the objectives and content of each instructional module; 2) television scripts/tapes; 3) lesson books which included some still photographs; 4) readiness reviews which were used as self evaluation instruments; 5) criterion-referenced performance tests; and 6) job programs which were performance tests of a sample or all of the job tasks in that module.

An inventory of all instructional, test and management/control materials developed for the two experimental courses is presented in Appendix A.

Experimental course instructional procedures. The trainee's introduction to each module started with the Student Learning Guide. This document provided the trainee with a list of relevant lesson books, a list of the job tasks to be mastered in the module, and a list of the performance tests that must be passed to receive a "pass" for the module. After reviewing the Guide, the trainee was directed to watch the appropriate TV tapes or slide/tapes for the module or station (if they were available) or to watch another trainee doing a relevant practical exercise. Then the trainee studied all of the brief lesson books applying to that particular module or station. The trainees were free to study the video or demonstrations and the printed materials as long or as often as they wanted. Following individual study, the trainees completed the practical exercises prescribed in each lesson book. The practical exercises were designed to provide practice on the knowledge and skills required to perform small segments of the job. Feedback on performance during the practical exercises was provided by facilitators or by trainee role players. After the trainees had studied and practiced sufficiently with the instructional materials and exercises, they completed a readiness review, which was designed to tell them whether or not they were ready for the performance test. If the results of the readiness review were positive, the trainees took a hands-on performance test which was administered and scored by a facilitator. After the performance test was passed, the

trainees moved on to the next station or module for another set of instructional materials.

Provision was made for the trainee to challenge the module test(s) at any time (s)he felt prepared to do so. In addition, a trainee who failed a test was directed to re-study and re-take the test after successfully completing the practical exercises and the readiness review.

The general sequence of activities and use of module components followed by the trainees in the experimental courses is presented in Appendix B. These procedures were entirely different from those used in the conventional courses.

Validation of Instructional Materials and Tests

Module and lesson components were tried out separately to determine whether they could perform their appropriate functions (e.g., do the tests provide the desired measure of performance? Do the practical exercises generate the appropriate skills and proficiencies? Do the media deliver the desired information?). The instructional material validation process was accomplished with small groups (three to 10 people) representative of the target population, in a formative manner. On-site observation and analysis of performance in the trials provided feedback for materials and/or instructional system revision. Validation was considered achieved when at least 80% of the sample group completed the module successfully the first time through the instruction. Content validity was attested to by subject matter experts provided by USAMPS.

Subjects used for the small group trials were trainees in the

conventional courses who had not yet received the segment of instruction being validated. The criterion of 80% success was met or exceeded in all of the instructional modules. In the 95B course, there were 13 test stations with supporting instructional materials to be validated. In 12 of these, 100% success was achieved in the validation process. In one test, 80% success was achieved. In the 95C course, there were 14 tests. In 10 of these, 100% success was achieved in the validation process. In three tests, 83% success was achieved, and in the remaining test, 80% success was achieved.

For various, institutional reasons, sample sizes for some of the validation trials was reduced from the originally stipulated 10 to 20 people. Subsequent discussions with content experts resulted in agreement that the revisions that had emerged as a result of the small group trials were the critical ones and that minor modifications that might emerge during the first iteration of each course could be incorporated into the final revision of materials. Following the small group trials and the subsequent revision of materials, the instructional materials were considered valid.

Staff Reorientation

A self-paced, performance-oriented course design requires facilitators to have a full comprehension of the principles and procedures essential to successful course operation. Because the experimental courses were trainee-centered rather than instructor-centered and were individually paced rather than group paced, the training of principal staff members in new instructional support techniques was an essential step. The existing Instructor Training

Course was examined to determine whether it included techniques essential to support of the experimental courses. Where instruction in essential techniques was lacking, materials were developed to train personnel to ensure the effective implementation and operation of the experimental courses. A Facilitator Training Program was developed that included a self-study training manual, a monitor's manual, tests and answer keys and a program progress form. Prior to the validation of experimental course materials, facilitators were to undergo any necessary training to prepare them to participate in the validation process in the roles they would fill during the first iterations of the experimental courses.

Operational Iterations of Experimental Courses

One operational iteration of each of the experimental courses was run concurrently with the conventional courses.

Subjects. Subjects for the experimental courses were not selected, except to the extent that trainees for the 95B and 95C courses are selected by the Army from the population of enlistees. One entire incoming class of 95B trainees (N=170) was designated as the experimental class solely on the basis of its starting date for training.

The 95C course provides training for U. S. Navy and U. S. Marine Corps as well as for U. S. Army personnel. The class for the present study (N=46) was designated as the experimental class first on the basis that it was scheduled to contain only Army trainees and, second, on the basis of its starting date for training.

In all other respects, subjects in both experimental courses

were assumed to be representative of the normal non-draft impelled Army input to the conventional courses. Characteristics of the normal input to the courses included: male and female first-time enlistees; approximately 20 years of age; mixed racial/ethnic background; measured aptitude above functional illiterate, but clustering in the middle aptitude range; and high school graduate.

At the time these two classes were designated to be experimental, the trainees had already been recruited by the usual Army methods and were undergoing basic training. At the time a person enlists in the Army, (s)he is designated for MOS job training on the basis of personal preference or on the basis of the Army's need to fill a quota of entry level personnel in that MOS. The enlistee undergoes eight weeks of basic training before reporting to MOS job training. This basic training generally takes place at one of several sites the Army maintains for that purpose throughout the country. Usually, the enlistee goes through basic training at a location near his home or near the place from which he was recruited. Females at the time of the study all received their basic training at one location. As a class forms for its MOS training, it is composed of trainees from all parts of the United States who come from varying socio-economic backgrounds and have varying amounts and quality of education.

The MOS job training site prepares a list of classes, expected dates on which these classes will start their MOS training, and expected numbers of trainees in these classes. These lists are prepared in advance for each Fiscal Year and are based on the same projected quotas on which recruitment is based. There was no way in

which the Army could have recruited enlistees specifically for the experimental courses, since the designation of experimental classes was made after the enlistees had entered the Army training system.

The starting dates for the experimental classes were chosen because: 1) the projected Ns were adequate for the study; 2) classes starting on those dates would be expected to complete the experimental courses within the time constraints on the study; and 3) no major breaks in training (such as the customary two week Christmas break) would occur subsequent to that date during the study.

Comparison groups were Army trainees who had completed the conventional 95B and 95C courses. Data on trainee performance and course cost-effectiveness for the conventional courses were available from USAMPS.

Direction of iterations. The experimental courses were operated and managed by assigned USAMPS course personnel. No additional personnel or facilities were required. The role of the researcher was that of advisor, observer and data tabulator.

Effectiveness of Experimental Courses

Trainees in the experimental courses were tracked by the researcher for the purpose of data collection. The criterion for course effectiveness was that 80% of the trainees must pass the tests (and, therefore, the course) the first time through the instruction. In addition to this criterion, course effectiveness was measured by comparing trainee time to completion in the experimental courses against trainee time to completion in the conventional courses.

Data on administrative aspects (such as problems encountered

in course management, effects of turbulence and assignment or utilization of early graduates) were tabulated by the researcher. Data on conventional course management were available on-site during the study and from existing USAMPS records.

Trainee and facilitator opinions of the experimental courses were also obtained. Opinion surveys used in the study were adapted from surveys previously used with Army (Hungerland and Taylor, 1975) and Air Force (Hungerland et al., 1976) personnel. These surveys had proven valid in eliciting information on trainee and instructor opinions regarding elements of performance-oriented and self-paced instructional systems as compared to conventional courses. Adaptations during the present study consisted only of changes in specification of job title and MOS references. Items were unchanged in their references to components of the instructional system related to performance-oriented and self-paced instruction.

Graduates of the conventional courses (N=161 for 95B; N=39 for 95C) provided baseline data for the comparison of trainee opinions. Facilitators who were familiar with both the conventional and the experimental courses were asked to compare the two courses by means of an evaluative survey.

Introduction of Change

To facilitate change, involvement of course facilitators in the developmental and evaluative process was maximized. Seven points of USAMPS review of course materials, tests and management plans were established: 1) during finalization of course task lists; 2) during development and test of criterion-referenced tests; 3) during develop-

ment of course modules, manager guides and student guides; 4) during small group trials of course materials; 5) during the first iterations of the courses; 6) after the first iterations of the courses; and 7) following revision of materials and management plans based on the first iterations.

Data Collection

There were seven categories for data collection. The following sections describe the means by which data were collected in each of these categories.

Trainee Performance

Each trainee in the experimental courses was required to pass each criterion-referenced test with 100% accuracy. A trainee's completion of the course subsumed this level of performance. However, the criterion that 80% of the trainees must pass the course still applied.

Trainee time to completion of the course was used as the second measure of trainee performance. These data were obtained on an individual basis from computerized records normally maintained by USAMPS. Trainee attrition data (academic and administrative drops) were obtained in the same way.

Trainee Opinions

As each trainee completed the course, (s)he was asked to complete the opinion survey and was allowed to make any additional comments regarding the course and his/her experiences in it. The survey instrument was administered to 161 trainees graduating from the

conventional 95B course and to 39 trainees graduating from the conventional 95C course for baseline data. The same instrument was administered to 123 trainees graduating from the 95B experimental course and to 46 trainees graduating from the 95C experimental course.

Cost-Effectiveness

Cost-effectiveness data were based on the cost to complete the course (based on trainee time in course) and additional equipment costs per trainee in the experimental courses. Comparisons were made on the basis of existing cost data for the conventional courses available from USAMPS documentation.

Facilitator Training

Following a review of existing facilitator training materials, it was found that special materials had to be developed specifically for the study. These materials, designed to instruct facilitators regarding the operation of self-paced courses, were developed and subjected to try-out with USAMPS personnel. Prior to the beginning of the first iterations of the experimental courses, the Facilitator Training Program materials were delivered to USAMPS. By USAMPS decision, the Program was conducted, monitored and evaluated by USAMPS personnel and data on the results of training were not made available to the researcher. Therefore, no performance data on this Program will be presented.

Facilitator Opinions

Toward the end of the first iterations of the courses (when they had had sufficient exposure to the experimental courses), facili-

tators were asked to complete an opinion survey in which they were asked to compare various aspects of the experimental courses to the conventional courses. The survey was completed by 81 facilitators for the 95B course and by 15 facilitators for the 95C course.

Course Management

Observational and historical data on management problems and solutions were recorded by the researcher throughout the study. On-site interactions with management personnel resolved minor problems on a continuing basis. More general problems were recorded and tabulated by the researcher for later recommendations for modification of the management plans.

Institutionalization of Change

Observational and historical data on facilitation of or resistance to change were recorded by the researcher throughout the study. A follow-up visit was made seven months after the completion of the study to determine the degree of institutionalization of the changes introduced during the study.

Data Analysis

Data were analyzed to determine whether there were significant differences between the experimental and conventional courses in terms of: 1) average trainee time to complete the courses; 2) cost-effectiveness of the experimental courses; and 3) acceptance of the experimental courses. Specific methods of analysis are described below.

Trainee Performance

Performance in the experimental courses was compared to performance in the conventional courses on the basis of average trainee time to complete the courses. Since the conventional courses had a performance criterion of 70% and the experimental courses had a performance criterion of 100%, improvement of performance was inherent in the experimental courses and was not analyzed, per se.

Facilitator Training

Data on performance in the Facilitator Training Program were not made available from USAMPS to the researcher. Inferences were made on the basis of facilitator performance during the first iterations of the courses.

Opinion Surveys

Opinion response data were analyzed by tests of χ^2. Comparisons between baseline and experimental groups were made on this basis for trainee opinions and for facilitator comparisons of the conventional and the experimental courses.

Cost-Effectiveness

Total cost per trainee per day in the conventional and in the experimental courses was computed. Cost-effectiveness was then evaluated on the basis of trainee time to complete the experimental courses compared to time to complete the conventional courses.

Methodological Assumptions

It was assumed that USAMPS would provide all subject matter input and documentation as well as all physical support for the study

(personnel, equipment, facilities). Subjects for the small group trials and for the iterations of the courses were also to be provided by USAMPS. It was also assumed that the researcher would provide expertise in the area of instructional technology and would guide, but not conduct, the first iterations of the courses. Data collection was a conjoint responsibility. Data analysis was the responsibility of the researcher.

Based on previous efforts at self-pacing Army training courses, it was assumed that the two experimental courses would prove to be cost-effective and that they would meet the criteria of 80% of the trainees completing the courses in 25% less time than in the conventional courses. Because of the attention given to the process of change, it was further assumed that the experimental courses would be accepted by the USAMPS personnel. In fact, because of their involvement in the development and test of the courses, it was assumed that they would experience a genuine and positive investment in the successful continuation of the experimental courses in place of the conventional courses.

Limitations

The study was limited to the U. S. Army population designated for training as Military Policemen or Corrections Specialists. Any generalization of results beyond the literate segment of the volunteer Army population should be viewed with caution.

The restraint on involvement of the researcher in the orientation and training of facilitators proved to be a severe limitation on the study.

Another limitation resulted from the lack of a military project officer with the total responsibility for the support of the study, resulting in a lack of researcher control over facilitator procedures in course operation.

Perhaps the most severe limitation on the study resulted from the lack of researcher control on the communications relevant to the study between the management and operational levels at USAMPS. Subsequent effects on facilitator opinions and performance were not quantifiable from the single iterations of the courses.

The first iterations of the experimental courses, on which this study was based, were the experimental phase-in stages for the courses. The USAMPS had been mandated to continue data collection on subsequent iterations. This action was not taken. Consequently, this study is limited to initial data only.

Chapter 4

RESULTS

The study dealt with a comparison between experimental and conventional courses in terms of trainee performance, trainee opinions of each course, cost-effectiveness of the experimental courses, facilitator opinions of the two courses, course management and the institutionalization of change. This chapter reports the differences between the courses resulting from the development of the experimental courses and the research results related to each of the areas of inquiry cited above.

Findings

The research design called for seven areas of data collection. The following is a presentation of the data related to each of the seven areas.

Trainee Performance

Experimental 95B course. Table 1 presents a summary of the time spent by trainees in the experimental 95B course from entry into the course to data of graduation. It should be noted that as of day 43 (the eight weeks, three days allocated to the conventional course), 77% of the experimental course trainees had graduated. By day 46, 80% of the trainees had graduated. A total of 88% of the trainees entering the experimental course graduated.

Table 1

95B Experimental Course Completion Rates

# Days in Course	# Completing Course on Day	Cumulative # Graduated on Day
25½	1	1
26½	1	2
27½	3	5
28	2	7
29	8	15
30	1	16
31	2	18
32	4	22
33	10	32
34	11	43
35	8	51
36	6	57
37	9	66
38	5	71
39	4	75
40	11	86
41	17	103
42	7	110
43	10	120
44	6	126
45	4	130
46	5	135
47	2	137
48	1	138
49	2	140
50	4	144
50½	1	145
52½	3	148
55½	1	149
59½	1	150

$\bar{X}$ days = 38.8; SD = 6.419

Summaries of trainee completion times in each of the six modules of the experimental 95B course are presented in Table 2. In each of the modules, there was a modal time range during which 50% or more of the trainees had achieved the training objectives for the module.

Table 2

95B Experimental Course
Module x Module Completion Times
No. Hours in Training

Module	N	$\bar{X}$ Hours in Training	Mode (Hrs:Mins)	Range (Hrs:Mins)
Physical Security	150	15:49	10:01-15:00	04:23-51:22
Traffic Accident Investigation	147	40:45	40:01-45:00	04:45-87:00
Combat Operations	153	10:00	05:01-10:00	02:00-55:30
Traffic Control	148	28:31	20:01-25:00	06:53-79:25
Crime Scenes	154	38:22	25:01-30:00	06:13-115:23
Other Incidents	155	25:56	10:01-15:00	08:25-119:00

An examination, by module, of "slow" trainees' records revealed that 58% of those who took the longest times to finish the modules had entered those modules during the first week of operation of the experimental course. Adjustments to the self-paced situation were taking place at that time, and managerial confusion may have contributed to delayed completion for these trainees. That is, between trainee hesitancy to move at the self-paced rate and managerial delay in

identifying trainees who had completed a module, time may have been wasted unnecessarily. Only 11 of these initially "slow" trainees were also slow in completing a subsequent module. The stations that seemed to give the trainees the most trouble were those in which completion of forms and reports was required. Trainee performance in the three modules that were conducted in the conventional manner (Weapons, Driving and Unarmed Self Defense) met USAMPS requirements.

Attrition for the conventional 95B training program (as cited in USAMPS' Basic Law Enforcement Attrition Study for FY 76) was 4.3% for academic reasons and 9.0% for administrative reasons. In the experimental course, there were 16.7% eliminated for administrative reasons and 5.2% eliminated for academic reasons. Of the academic eliminations, only three (1.6%) were eliminated from the experimental portion of the course; the remainder (3.6%) were eliminated from the portion of the course conducted in the conventional manner. As nearly as could be determined from USAMPS data, these eliminations were from Weapons Qualification.

Although the experimental 95B course met the criterion that 80% of the trainees would pass the course, the criterion that they would do so 25% faster than trainees completed the conventional course was not met. With an average completion time of 39 days, 88% of the trainees entering the experimental course graduated. Although they took slightly longer than the conventional course trainees to complete the course, experimental course trainees met an absolute criterion (100%), while conventional course trainees met a 70% criterion.

Experimental 95C course. Table 3 presents a summary of the

time spent by trainees in the experimental 95C course from entry into the course to date of graduation. Time allocated to the conventional course was seven weeks, four days. All of the trainees entering the experimental course graduated. The mean completion time in the experimental course was 23.85 days, indicating that the mean completion time was 39% faster than in the conventional course.

Table 3

95C Experimental Course Completion Rates

# Days in Course	# Completing Course on Day	Cumulative # Graduated on Day
21½	2	2
22	2	4
22½	6	10
23½	15	25
24	3	28
24½	8	36
25	4	40
25½	5	45
26½	1	46

$\bar{X}$ days = 23.85; SD = 1.15

Trainee performance in the introductory segments (History of Corrections, Legal Aspects of Corrections, Interpersonal Communications, and Weapons Training) met USAMPS requirements. These segments were conducted in the conventional manner, using conventional course materials. Attrition for the conventional 95C training program was recorded by USAMPS as having been 1.9% for academic reasons and 3.2% for administrative reasons. There was no attrition from the

experimental 95C course.

The experimental course met both of the course effectiveness criteria in that 100% of the trainees passed the course and did so in an average of 39% less time than trainees completed the conventional course.

Trainee Opinions

Experimental 95B course. The Trainee Questionnaire was administered to 161 graduates of the conventional course for baseline data. The same questionnaire was later administered to the trainees in the experimental course (N=123) as they finished their training. A copy of the questionnaire with the frequency of responses and Chi Squares for each item for each of these two groups is presented in Appendix C.

Table 4 summarizes the response data on the first 17 items of the questionnaire, which addressed different aspects of the training program. The two groups differed significantly in their responses on 11 of these 17 items.

Item #1. Compared to the baseline group, trainees in the experimental course reported they were less often allowed to take performance tests when they thought they were ready.

Item #2. The trainees in the experimental course reported the performance tests to be less complete checks on what they had been taught.

Item #6. The trainees in the experimental course reported more often being given additional time to get ready for performance tests when needed.

Table 4

Trainee Opinions on Items 1-17
Experimental 95B Course vs Baseline

Paraphrased Item	Experimental			Baseline		
	Yes	Neutral	No	Yes	Neutral	No
1. Allowed to take performance test when ready	98	16	9	142	15	4[b]
2. Performance test complete check	77	13	33	135	21	5[c]
3. Progress fast as can	78	24	21	110	27	24
4. Others progress fast as can	71	36	15	98	40	22
5. Move at own pace	78	41	4	110	45	6
6. More time to prepare for tests	105	13	4	109	33	19[b]
7. Motivation/morale high	12	29	80	84	63	14[c]
8. Instructors helpful	42	44	37	120	34	5[c]
9. Instructors interested in trainees learning	22	49	52	91	50	18[c]
10. Instructors work w/trainees	15	35	73	57	56	46[c]
11. Practical exercises helpful	79	34	9	139	17	3[c]
12a. Learning environment crowded	97	--	24	129	--	32
12b. Crowd interfered with studying	51	34	12	50	57	22
13a. Learning environment noisy	78	--	45	86	--	75
13b. Noise interfered with study	49	23	6	32	31	23[b]
14. "Mickey Mouse" requirements interfered	50	36	35	42	54	65[a]
15. Had to wait for training	18	61	43	26	55	79
16. Had to wait for assistance	24	53	45	18	49	94[b]
17. Had to wait for testing	39	47	37	49	51	61

[a] $p = < .05$

[b] $p = < .01$

[c] $p = < .001$

Item #7. Motivation and morale were reported as lower in the experimental course.

Items #8, 9, 10 and 11. The trainees in the experimental course reported the facilitators to be less helpful with practical exercises, questions and problems; and that the practical exercises were less helpful in preparing them for the tests. They reported that facilitators less often showed interest in the trainees' learning and performance, and that the facilitators less often worked individually with the trainees.

Items #13b and 14. The trainees in the experimental course reported more often that noisy learning environments interfered with their studying and that "Mickey Mouse" requirements (petty or meaningless requirements that did not serve any useful purpose in training) rushed or interfered with their studying.

Item #16. The trainees in the experimental course reported more often having to wait for assistance during the course.

The last item on the questionnaire asked the trainees to report their feelings of preparedness in the 36 job duty areas identified on the task list. In 23 of the areas, there were no significant differences in feelings of preparedness reported by the two groups of trainees. In the following 11 areas, significantly greater feelings of preparedness were reported by the trainees in the experimental course:

Vehicle Driving (D)
Speed Gun Operation (J)
Pace Speeding Vehicles (K)
Testify in Court (M)
Conduct Hasty Route Reconnaissance (N)
Perform as Special Weapons Security Guard (S)
Search Subjects (X)

Complete Sworn Statements (A.A.)
Respond to Domestic Disturbance (G.G.)
Apprehend Known Felon (H.H.)
Detect Suspicious Activities (I.I.)

In three of these areas there was no test in the conventional course (Speed Gun, Testify in Court, Apprehend Known Felon). The trainees in the baseline group, therefore, were not tested on these tasks. The other eight areas had all been a part of the conventional course, and both groups had been tested on them.

In the following two areas, significantly greater feelings of preparedness were reported by the baseline group.

Vehicle Maintenance (E)
Collect and Process Evidence (B.B.)

In the area of Collect and Process Evidence, the baseline group had not been tested on the task of processing evidence found on a person during a search.

In addition to responding to these questionnaire items, many trainees made written comments of their own. Of the first 61 questionnaires completed by graduates of the experimental course, 42 had such comments. Of these comments, 64% commented specifically on facilitator behavior or attitudes; 26% commented specifically against the 100% criterion on tests; and 9.5% commented specifically in favor of the 100% criterion. Of the 27 comments that referred to facilitators, 19 indicated the facilitators were generally unhelpful, unprepared, negative or non-accepting of the experimental course.

Experimental 95C course. The Trainee Questionnaire was administered to 39 trainees who had completed their 95C training for baseline data. The same questionnaire was administered, after training,

to the trainees in the experimental course (N=46). A copy of the questionnaire with the frequency of responses and Chi Squares for each of these two groups is presented in Appendix D.

Table 5 summarizes the response data on the first 16 items of the questionnaire, which addressed different aspects of the training program. The two groups differed significantly in their responses on seven of these 16 items.

Item #1. Compared to the baseline group, trainees in the experimental course reported they were less often allowed to take performance tests when they thought they were ready.

Item #5. The trainees in the experimental course reported more frequently that the trainees who needed more time to prepare for the test(s) were given the additional time.

Item #6. Motivation and morale were reported as lower in the experimental course.

Items #11a and 12a. The trainees in the experimental course reported more frequently that the learning environment was crowded and noisy.

Item #14. The trainees in the experimental course reported that they had more waiting time for training.

Item #16. The trainees in the experimental course reported that they had more waiting time for testing.

The last item on the questionnaire asked the trainees to report on their feelings of preparedness in the 18 job duty areas identified on the task list. In five of these job areas (Legal Aspects, Interpersonal Communications, Dining Facility Guard, Segregation and Visiting Room Procedures), there were no differences

Table 5

Trainee Opinions on Items 1-16
Experimental 95C Course vs Baseline

Paraphrased Item	Experimental			Baseline		
	Yes	Neutral	No	Yes	Neutral	No
1. Allowed to take performance test when ready	32	10	4	34	3	2[a]
2. Performance test complete check	35	6	5	36	3	0
3. Progress fast as can	23	12	11	19	12	8
4. Others progress fast as can	19	17	9	20	13	6
5. More time to prepare for test	45	0	0	26	6	6[b]
6. Motivation/morale high	21	18	6	28	10	1[b]
7. Instructors helpful	43	2	0	39	0	0
8. Instructors interested in trainees learning	40	5	1	37	2	0
9. Instructors work w/trainees	25	15	6	26	11	2
10. Practical exercises helpful	37	7	2	35	4	0
11a. Learning environment crowded	27	--	19	5	--	34[c]
11b. Crowd interfered with studying	10	8	9	1	1	3
12a. Learning environment noisy	26	--	20	7	--	32[c]
12b. Noise interfered with study	8	13	5	1	2	4
13. "Mickey Mouse" requirements interfered	5	5	36	4	11	24
14. Had to wait for training	14	21	11	1	9	29[c]
15. Had to wait for assistance	2	9	35	0	3	36
16. Had to wait for testing	21	19	3	7	10	22[c]

[a] $p = < .05$
[b] $p = < .01$
[c] $p = < .001$

between the two groups in reported feelings of preparedness. In all other 13 areas, the experimental course trainees reported significantly greater feelings of preparedness for job duties than the baseline group.

Cost-Effectiveness

Experimental 95B course. The time allocated for the conventional course was eight weeks, three days. Because of some within-module self-pacing in the conventional course, trainee performance in the conventional course over a four month period just prior to the current study was reported by USAMPS as resulting in an average course completion time of 37 days. The fastest trainee graduated in 27 days from the conventional course and the slowest trainee completed the course after 61 days. Trainee performance in the experimental course resulted in an average completion time of 39 days. The fastest trainee graduated in 25½ days and the slowest trainee completed the course in 59½ days (see Table 1).

The number of days in training in the experimental course was tabulated from the first scheduled training day. The one day used for inprocessing (completion of forms, driver testing, etc.) was not deducted from the number of training days in course. Time was deducted for each individual, as appropriate, for time not scheduled for training activities. For example, for each trainee in the experimental course on the day of occurrence, times were deducted for emergency closure of the post due to an energy crisis; for moving to a new training facility; for one holiday; and for three half-days for pay days. Time for absences due to sick call, being absent without

leave, emergency leaves, etc., were not deducted, as data were not received from the training company. Because of variation of time actually devoted to or available for training, training time per day in the experimental course was calculated at 6.5 hours. This was based on the following observed times: noon meal break was never less than two hours per day; training on one day per week stopped at 3:00 PM; training on some days stopped at 5:00 PM and on other days at 4:00 PM. The training hours in the morning were regularly from 7:30 to 11:00 AM, which meant that the training day varied from 5.5 hours to 7.5 hours on a given day.

The cost per trainee for the conventional course (according to a USAMPS cost analysis in May 1976) was $2,582. Based on the average completion time, the cost per trainee per day for the conventional course was $69.78. When the task list was revised, approximately 16 hours 40 minutes of instruction were deleted from the conventional course and approximately 28 hours of instruction were added. The net result was an increase in the length of the experimental course by 1.74 days of instruction. The adjusted cost of the conventional course when the cost of 1.74 days additional was added, was $2,703.42. Using the USAMPS cost figure, the average cost per trainee for the experimental course was $2,707 (38.79 days times $69.78).

There were no additional costs for personnel or facilities. Instructional materials and test materials represented a one-time cost. There was a requirement in the experimental course for an additional three speed guns at $1,100 each for a total equipment cost of $3,300. Requirements for audio-visual and other equipment were unchanged from

those of the conventional course.

With the cost per trainee to complete the experimental course at $2,707 and additional equipment cost per trainee (amortized over one year) at $.48, the total experimental course cost per trainee was $2,707.48. The adjusted cost per trainee to complete the conventional course was $2,703.42, resulting in a net additional cost of $4.06 per trainee in the experimental course.

Experimental 95C course. The average time required to complete the total experimental 95C course was 23.84 days. Time allocated to the conventional course was 39 days. The slowest trainee in the experimental course completed the course in 68% of the time required by the trainees in the conventional course. The average trainee in the experimental course completed the course in 61% of the time required in the conventional course. The cost per day per trainee (according to USAMPS) was $67.92. The average cost for trainees to complete the experimental course was $1,619.21 (23.84 days times $67.92). For the conventional course, the cost was $2,648.88.

No additional instructors were assigned to accommodate the experimental course. Different allocations of instructor time and activities were effected--more of the staff were at the mock confinement facility, since all of the experimental course instruction took place there rather than being divided between the classroom and the mock facility. There was a one-time requirement for training support materials, which were readily available through normal supply channels at no direct cost. Requirements for simulation were effected at little cost. No audio-visual equipment was used for the experimental course.

With no additional costs occurring, the reduced cost per trainee to complete the experimental course resulted in a 62% dollar savings.

Facilitator Training

According to USAMPS personnel, every facilitator associated with the 95B and 95C courses attended a training session and completed the Facilitator Training Program. The training was conducted in a classroom setting with large groups, rather than as a "take-home," individualized study program (which had been the basis of the Program design). Performance was monitored by USAMPS and data were not provided to the researcher.

Based on observations of facilitators' subsequent behavior and on communication with individual facilitators, it is doubtful that all facilitators attended the training. This conclusion is based on facilitators' expressed lack of awareness of the nature and purpose of the experimental courses and their expressed lack of knowledge regarding performance-oriented and/or self-paced instructional programs. Just prior to the start of the first iterations of the experimental courses, a meeting with the managers of the 95B course revealed that they had no prior understanding of the nature or purpose of the study nor of their roles in it. Their training consisted of face-to-face communication at that time with the researcher.

Because of the apparent lack of information evident with the 95B facilitators, similar briefing/discussion seminars were arranged for researcher interaction with the facilitators and managers of the 95C course. These meetings were held prior to the first iterations of the experimental courses.

Facilitator Opinions

Toward the end of the study, when they had had sufficient experience with the experimental courses on which to compare them to the conventional courses, the 95B facilitators and managers (N=81) and the 95C facilitators and managers (N=15) completed a questionnaire similar to the Trainee Questionnaire. Items #1 through #13 referred to the conventional and experimental training programs; the 14th item referred to trainee preparedness in specific job duty areas. Each item asked for a comparison between the conventional course and the experimental course.

Experimental 95B course. A summary of responses for 95B facilitators and managers is presented in Appendix E, along with the questionnaire. Table 6 summarizes the response data on the first 13 items of the questionnaire. Responses showed little spread among response categories. Consequently, no tests of significance were run on these data and summed responses are reported.

In seven areas, 50% or more of the facilitators responding rated the experimental and the conventional courses the same.

Item #7. Trainees allowed to go through the course as fast as they could learn (60%).

Item #8. Trainees given additional time to get ready for the performance tests if needed (73%).

Item #10. Instructors work individually with trainees (53%).

Item #12a. Crowdedness of learning environment (72%).

Item #12b. Effect of crowdedness on studying (83%).

Item #13a. Noisiness of learning environment (83%).

Table 6

Facilitator Opinions on Items 1-13
Experimental 95B Course vs Conventional Course

Paraphrased Item	# Favoring Experimental Course	# Favoring Conventional Course	# Rating Both the Same
1. Facilitator motivation/ morale high	2	59	13
2. Facilitator workload heavy	23	31	18
3. Facilities/resources used efficiently	2	51	18
4. Facilitator time used efficiently	2	48	22
5. Want graduate in field unit	6	46	18
6. Performance tests complete	5	42	25
7. Trainees go fast as can	14	16	41
8. Trainees given time to prepare for tests	9	12	50
9. Trainee motivation/morale high	1	57	14
10. Facilitators work w/trainees	4	32	35
11. Practical exercises helpful	1	39	27
12a. Learning environment crowded	4	15	49
12b. Crowd interfered w/studying	2	3	27
13a. Learning environment noisy	2	9	59
13b. Noise interfered w/studying	0	0	21

Item #13b. Effect of noisiness on studying (100%).

In seven areas, 50% or more of the facilitators favored the conventional course over the experimental course.

Item #1. Motivation/morale of facilitators high (78%).

Item #3. Facilitators/resources used efficiently (71%).

Item #4. Facilitators' time used efficiently (65%).

Item #5. Would want graduate assigned to my unit (66%).

Item #6. Performance tests complete checks (56%).

Item #9. Motivation/morale of trainees high (79%).

Item #11. Practical exercises helpful (58%).

On the remaining item (Item #2), 42% of the facilitators favored the conventional course regarding facilitators' work load; 30% favored the experimental course; and 28% rated the two courses the same.

On the item related to job duty areas, the facilitators reported that they felt the trainees in the conventional course were prepared as well as or better than the trainees in the experimental course to perform the skills they had been taught. In 31 of the 36 job duty areas, more facilitators rated the two courses the same than favored one or the other course.

Experimental 95C course. Response frequencies and Chi Squares for 95C facilitators and managers are presented in Appendix F. Table 7 summarizes the response data on the first 13 items of the questionnaire. Responses indicated significant facilitator favorability toward the experimental course in only one area--Item #8, trainees given additional time to prepare for performance tests if they need it ($p < .02$). The facilitators expressed significantly more favorability toward the conventional course regarding the level of trainee and facilitator motivation and morale; the efficient use of time and resources; the completeness of the performance tests; the helpfulness of the practical exercises; the conditions of the learning environment; and their preferences for having a course graduate in their field unit.

Table 7

Facilitator Opinions on Items 1-13
Experimental 95C Course vs Conventional Course

Paraphrased Item	Experimental			Conventional		
	Yes	Neutral	No	Yes	Neutral	No
1. Facilitator motivation/ morale high	2	5	8	12	2	0[c]
2. Facilitator workload heavy	9	4	2	5	9	0
3. Facilities/resources used efficiently	5	1	9	13	0	1[a]
4. Facilitator time used efficiently	5	0	10	13	1	0[b]
5. Want graduate in field unit	1	1	13	14	0	0[c]
6. Performance tests complete	5	1	9	13	0	1[b]
7. Trainees go fast as can	7	5	3	4	3	6
8. Trainees given time to prepare for tests	14	1	0	10	3	1[a]
9. Trainee motivation/morale high	0	8	7	11	3	0[c]
10. Facilitators work w/trainees	5	6	4	9	5	0
11. Practical exercises helpful	6	4	5	13	0	0[b]
12a. Learning environment crowded	15	--	0	7	--	7[b]
12b. Crowd interfered w/studying	8	6	1	3	2	2
13a. Learning environment noisy	9	--	5	2	--	11[b]
13b. Noise interfered w/studying	4	2	0	1	0	0

[a] $p < .02$
[b] $p < .01$
[c] $p < .001$

On the item related to job duty areas, there were three areas in which the facilitators did not report a difference in degree of preparedness between trainees from the two courses--Interpersonal

Communications, Weapons Qualification and Priorities of Force. In all other 15 job duty areas, the facilitators reported the conventional course trainees to be significantly better prepared than the trainees in the experimental course. In no instance did any facilitator report a trainee from the conventional course to be "Unprepared." It should be noted that eight of the 15 facilitators responding had been test administrators and evaluators for the experimental course and were responsible for certifying trainees' 100% accuracy on job skill performance tests.

Course Management

A common problem that was shared by the two experimental courses was the apparent custom of fixed assignment of facilitators to one or another subject area within the courses. Rather than having facilitators available for assignment to any subject area, course managers assigned the staff to a subject area and that assignment became the facilitator's permanent job placement while at the course. A certain amount of proprietary inflexibility occurred when facilitators were required/requested to function in another subject area during the study. Although facilitators may become experts in a portion of their overall jobs, they are responsible for job knowledge in all subject areas. Overall, management and operation of the experimental courses was less effective than it might have been if all facilitators had become familiar with all modules of instruction, creating more flexibility of personnel assignment and performance. Special additional problems encountered in each of the experimental courses are presented separately below.

Experimental 958 course. In the first iteration, the six course modules were grouped in pairs in Tracks 1, 2 and 3. A disadvantage of this grouping was that a trainee who had completed one module of a track was required to proceed to the other module in the same track, even if some module in another track was relatively less crowded. To facilitate the flow of trainees to whatever modules are the least crowded at a given time, each of the six modules should have been designated as a separate entity.

On-site observations indicated that a central control and information coordination office for the course was needed because of the dispersion of responsibilities within the training department. A single control office would monitor all trainees in the course on an individual basis, which would allow assignment of trainees to modules according to density of module usage.

Observations and reports from trainees (in informal, open-ended group interviews) indicated that some of the trainees in the experimental course were held over in a module for excessive lengths of time to act as role-players in practical exercises or performance tests. In part, this was also a result of not having an adequate central control office to monitor the progress of trainees in the course. In addition, the facilities and facilitators were not used in the most effective way--one facilitator from each module was used to "babysit" with the audio-visual materials and equipment, which were scattered rather than centralized.

One of the major problems related to trainee movement through the course was that no limits or estimates of time in each module had been set prior to the study. In other words, there were

no time-linked cues to alert facilitators when a trainee might be spending an inordinate amount of time in a module. Trainees also had no such cues. Realistic time estimates for each module for subsequent iterations of the course were derived from the modal times determined in this study.

There was some inconsistency in the manner in which the practical situations were presented to the trainees for the practical exercises and the performance tests. Some facilitators were not willing to make use of the flexibility allowed them in creating these situations. Video tape and/or slide presentations would have provided more consistency, although cost would have been higher and flexibility for re-test situations would have been lessened.

Some of the problems encountered in the experimental course resulted from inadequate middle-management. The facilitators may have done their jobs or assigned duties, but the coordination that should have been effected by the training department did not take place. This lack of coordination served to exacerbate confusion for trainees and for facilitators.

Experimental 95C course. The class for the experimental course was isolated from other trainees. All of their training in the experimental course took place in the existing mock confinement facility. This area is used in the conventional course as the location for an end-of-course practical exercise. With all of the training taking place in this facility, a laboratory-type setting for the experimental course was created. On the other hand, all training took place in a high fidelity simulation of the actual job setting. The greatest

drawback to this situation was that it was not entirely practical. The initial management plan proposed by the researcher had called for an integrated use of available classroom areas and the mock facility. A good deal of the study and practical exercises for the experimental course could have been conducted with simulation in classroom areas. Testing had to be conducted under realistic conditions at the mock facility. This arrangement was designed to alleviate crowded conditions at the mock facility when Navy and Marine Corps trainees were also being trained and to allow the fullest utilization of facilitator personnel.

The major problem that occurred was a result of the lack of institutional capability for the trainees to arrive for the experimental course on a small group basis. Initially, it had been anticipated that trainees would "self-pace out" of Weapons Training--as they qualified on the weapons, they would break away from the class as a group and arrive at the mock facility for the experimental course on an individual basis. This was not possible, so a management plan for accommodation of large (up to 45) initial input to the course was devised by the researcher and was used with success by the facilitators when 23 trainees arrived on the initial day of the experimental course.

Institutionalization of Change

In general, the attitudes of the course managers and facilitators were negative toward the experimental courses and the implementation of the courses (as indicated by trainee questionnaires, facilitator questionnaires and on-site interviews and observations).

Because the facilitators did not appear to have a clear understanding of their roles in the experimental courses, many of the course learning materials were used in a negative or punitive manner. In most cases, when the trainees came to the facilitators with problems, they were simply told to go back and read the lesson books again or to go through the audio-visual materials again.

Ironically, the experimental courses seemed to call for more autonomous exercise of imagination than the facilitators and course managers chose to use. Where facilitators were given the flexibility to compose test situations (within limits set by the test specifications), they foundered and seemed to prefer having set instructions to follow, without variation, and a "script" to read to the trainee. In the 95C course, facilitators complained often that they would have done better if they had had the experimental course materials ahead of time. In fact, all materials and tests for the course were in their possession for more than a week prior to the start of the experimental course. Further, facilitators in both courses had been involved in the development and validation of experimental course materials.

A further paradox was that, although they had identified the tasks and procedures for testing and had certified the trainees in the experimental courses as having completed performance of these tasks 100% correctly, the facilitators overwhelmingly rejected the experimental course graduates as job-qualified. In the 95B experimental course, trainees reported that facilitators were often harder on them in the test situations. Some trainees reported that the tag they were required to wear was a guarantee of test failure.

In the long run, change did not take place. In a follow-up visit seven months after the study, virtually no evidence of the experimental courses was found, although continued data collection had been mandated to USAMPS by the Army.

Summary

The experimental 95B course met one of the feasibility criteria in that of the 170 trainees entering the experimental course, 88% graduated. The second feasibility criterion, that trainees would complete the course in 25% less time than trainees completed the conventional course was not met in this course. Consequently, there were no cost savings.

The experimental 95C course met both feasibility criteria--100% of the trainees entering the experimental course completed the course in an average of 39% less time than trainees completed the conventional course. This performance resulted in a 62% dollar savings in the experimental course.

Compared to the reports of the trainees in the conventional courses, trainees in both experimental courses reported: that motivation and morale were significantly lower; that they were not allowed to take performance tests when they felt prepared to do so; that they were given additional time to prepare for tests when they needed it; that the learning environment was crowded and/or noisy; and that they had more waiting time for training, testing or assistance in the courses. In addition, the trainees in the experimental 95B course reported: that the performance tests were not complete checks on what they had been taught; that the practical exercises

were not helpful; that "Mickey Mouse" requirements rushed or interfered with their studying; and that facilitators were disinterested and did not work individually with them.

Trainees in the experimental 95B course reported significantly greater feelings of preparedness than conventional course trainees in 11 of the 36 job duty areas in the course. Trainees in the experimental 95C course reported significantly greater feelings of preparedness than the baseline group in 13 of 18 job duty areas.

Facilitator comparisons of the experimental and conventional 95B courses favored the conventional course on: facilitator and trainee motivation/morale being higher; efficient use of resources and time; tests being complete checks; practical exercises being helpful; and wanting a graduate assigned to their units in the field. In no case did the facilitators rate the experimental course graduates as better prepared than conventional course graduates in the 36 job duty areas of the course.

Facilitator comparisons of the experimental and conventional 95C courses favored the conventional course on all dimensions except the amount of time trainees were given to prepare for tests if they needed it. In 15 of the 18 job duty areas, facilitators rated conventional course graduates as significantly better prepared than experimental course graduates.

Management problems during the first iterations of the experimental courses were resolved only with the intervention of the researcher. Trainee records and control documents were used appropriately, but Course Managers' Guides were generally ignored. The experimental courses did not require personnel or facilities beyond

those already on hand and assigned to the course, although personnel and facilities were not used as efficiently as they could have been. The experimental 95C course required some additional vehicles and supplies, but these were readily available through normal supply channels at no additional cost to the program.

Both experimental courses were exportable in terms of their structure and format and in terms of their minimal requirements beyond normal allocations for equipment, personnel or facilities. Based on the facilitator behaviors encountered in this study, management assistance might be required for implementation in other locations.

In general, attitudes of course managers and facilitators were negative toward the experimental courses. Resistance to change was manifested throughout the study, culminating in the failure of USAMPS to conduct the subsequent iterations of the experimental courses for the purpose of further data collection.

Chapter 5

CONCLUSIONS, DISCUSSION AND IMPLICATIONS

The purpose of the study was to develop and evaluate self-paced courses for the Army's Military Policeman (MOS 95B) and Corrections Specialist (MOS 95C), and to do so in a way that would facilitate their continuation and incorporation into the Army training system. The importance of the study lay in the possibility of producing a tested model for systematically introducing and sustaining self-paced instruction in the Army training system.

A quasi-experimental approach was used for the evaluation of the two experimental courses. Experimental and control groups were employed, posttest only, with non-random groups. Task lists for the two courses were finalized, tasks were clustered and criterion-referenced performance tests were developed. Instructional materials were developed using the criterion-referenced tests as terminal objectives. As instructional materials and tests were developed, they were validated with trainees who were representative of the target population. An orientation program for facilitators was developed, validated and delivered to management for the training of all facilitators who were to be involved with the experimental courses.

The two experimental courses were run concurrently with the conventional courses. One entire class for each course served as subjects (N=170 in 95B; N=46 in 95C). Graduates of the conventional

courses served as comparison groups (N=161 for 95B; N=39 for 95C). Data were collected on: trainee performance; trainee opinions; cost-effectiveness; facilitator opinions; course management; and institutionalization of change. Data on facilitator training were not provided to the researcher.

The study was limited in that: 1) it is generalizable only to the literate segment of the volunteer Army designated for training in 95B or 95C; 2) the researcher was prevented from conducting the Facilitator Training Program; 3) the researcher had no control over communications relevant to the study between management and operational levels; 4) there was no military project officer with direct responsibility for the support of the study; and 5) the study provides initial data only.

Results indicated that:

1. The experimental 95C course was more effective than the conventional course at a 62% dollar savings and was operationally feasible;

2. The experimental 95B course was as effective as the conventional course and was operationally feasible;

3. Trainees in the experimental courses reported significantly greater feelings of job-preparedness than trainees in the conventional courses in 30% (95B) and 72% (95C) of the job duty areas;

4. Facilitators in both courses favored the conventional courses and generally reported negative opinions of the job-preparedness of experimental course graduates;

5. Management plans and procedures, facilities and personnel

were not used efficiently by facilitators in the experimental courses;

6. Resistance to change was evident at management and at operational levels.

Conclusions

Based on the findings, the following conclusions were drawn:

1. Individualized instruction for Military Policemen and Corrections Specialists is feasible to implement and operate;

2. With individualized instruction, trainees in these MOS can achieve higher levels of skill competence (100% criterion) in the same or less time than it takes trainees to achieve a lower level of skill competence (70%) criterion) using conventional instructional methods;

3. Individualized instruction enhances trainee feelings of confidence to perform the job;

4. In the Army context, individualized instruction does not need the enthusiastic endorsement of the adopter in order to be effective; and

5. To facilitate institutional change, communication and orientation to the change must focus on middle management--in the Army context, that level between command and operational responsibilities.

Discussion

Discussion of the research results will focus on the relative merits of the experimental courses and on management and the issues of institutional change.

Experimental Courses

The experimental 95C course far surpassed the effectiveness criteria even though facilitators reported negative opinions of the course and the graduates. It is possible that trainee performance reflects a Hawthorne effect (Fox, 1969), due to their isolation into a semi-laboratory setting. Classes in the 95C course are small normally, so class size itself in the experimental course is not considered to be a factor. However, due to the separation of the class from other trainees and the containment of training in one facility, it was easier for the researcher to track management procedures and make interventions regarding operational procedures before they became detrimental. Results of this study relative to this course must, therefore, be viewed with some caution.

The experimental 95B course did not meet the time/cost savings criterion. However, this study suggests that in approximately the same length of time as the conventional course, the experimental course graduated trainees at a 30% higher level of skill competence (100% vs 70% in the conventional course). The amount of tradeoff between time/cost savings in training and increased competence of graduates is a value judgment that must be made by the consumer--in this case, the Army.

It is not entirely clear why the trainees did not complete the experimental 95B course faster. Several issues need to be considered. As noted in the results, facilitators and trainees did not have time-linked cues to alert them when a trainee might be spending an excessive amount of time in a module. This may also account for some trainees reporting having been held over in a module to serve as role players. Following the study, modal times to complete each

module and suggested maximum times to be allocated to each module were provided by the researcher to USAMPS. It was suggested that if a trainee exceeded these maximum times in two modules, (s)he might be considered for elimination from the course.

There were some stations within the course that exhibited higher retest rates. These stations involved the filling out of complicated forms. Subsequent to the study, job aids for completion of forms were developed by the researcher and provided to USAMPS along with a recommendation that the training and evaluation materials for these stations be examined critically and re-validated.

One factor that may account for reports of lowered motivation and morale was the fact that the trainees in the experimental 95B course were mixed in with the trainees in the conventional course during the training day. To distinguish them from the trainees in the conventional course, each trainee in the experimental course was required to wear a manilla-type baggage tag with a red "X" on it. This procedure was introduced by USAMPS so that trainees in the experimental course would not be given the incorrect instructional approach nor the conventional performance tests. In some ways, this tagging served to demoralize the trainees. In other ways, it served to promote cohesion. The tagging was not entirely effective for the stated purposes. At one point during the study it was discovered that facilitators had given some of the tagged experimental course trainees the 70% criterion tests from the conventional course. This was explained by the facilitators involved as an overall decision by middle management to "support" the study--that is, to get the trainees through the program. The procedure was stopped following researcher

intervention and the data for these trainees in those modules in which they had taken the 70% criterion tests were eliminated from the data analysis in the study.

In informal group interviews, trainees in the experimental 95B course reported that they experienced frustration because the facilitators were extremely hard on them in grading the performance tests. In some cases, trainees were required to re-study an entire module for making one minor, non-critical error on a form. It appeared that some of the facilitators were over-zealous in seeking ways to enforce the 100% criterion. On the other hand, the experimental course trainees felt better prepared in 11 of the job duty areas. These feelings may have been a direct result of the rigorous testing, which is a positive outcome. Feeling confident and well prepared to do the job is more important than enjoying the course of instruction, although these factors are not mutually exclusive.

In the experimental 95B course, facilitators seemed unable to decide which of the two courses they liked better and which course did a better job of preparing trainees in their job skills. This apparent ambivalence may have resulted from the facilitators' seeing the experimental and conventional courses as basically being the same, with neither showing particular advantages.

In the experimental 95C course, there were contradictions within the facilitators' expressed opinions of the course and between the facilitators' opinions of trainee job-preparedness and trainee performance. The facilitators expressed unilaterally negative feelings about the course and the job-preparedness of the graduates. These same facilitators had been involved in the development and validation

of instructional and test materials, and had been the ones who had certified each trainee's absolute mastery of the required job skills. The facilitators may have been saying something about their own input in the experimental course--that, somehow, they either had not specified the job skills adequately or had not been rigorous in their administration of the performance tests. Or, they may have been saying that they had no confidence in the process by which the trainees received their training--there may have been too much "evil magic" (Salmon, 1904) involved for them. There was some dissonance, which is related to management and the issues of change.

Management and Institutional Change

In both experimental courses, interventions by the researcher had to be made before the Managers' Guides and management plans for the courses were used. Even then, the management plans were not used fully nor adequately. In the experimental 95C course, no attempt was made to integrate the experimental course with the available classroom facilities where the management plan had specified that simulations and practical exercises might be conducted. As a result, the evaluation of the 95C course was not conducted in a truly operational framework In both courses, the specifications for initiating out-processing procedures for graduates were not followed, resulting in unnecessary delays in graduates proceeding to their first duty assignment locations.

It appears that one of the major failings of the study was the fact that the researcher did not conduct, monitor and collect data on the Facilitator Training Program. One of the common complaints

from facilitators was that they did not know what the study was about nor what their roles/responsibilities in it were. Had the facilitators actually been involved in the Facilitator Training Program, they would have had some idea of what the study was about, the degree of command support it had and what was expected of them in the experimental courses. This critical gap in communication no doubt accounts for much of the resistance and negative opinions of the facilitators toward the experimental courses. Because of their lack of information, the facilitators may have been inoculated against the study (Cohen, 1964) by gossip (Niehoff, 1967). In Cohen's (1964) framework, gossip may have supplied the less desirable ideas and when the more desirable ideas were presented by the researcher, the resistance to persuasion may already have been mobilized. Bearing in mind Niehoff's (1967) finding that gossip was a powerful force, gossip or rumors among the facilitators may have built resistance against what was perceived as a threat to "current practices, individual competence, sacred cows, tradition, or long-accepted doctrine" (Lyons, 1966:6).

The facilitators, in all fairness, generally followed the instructions they were ultimately given by the researcher. When they were told clearly what to do and how to do it, they did so. The expectations of the facilitators apparently included sitting back and waiting to be told--by the researcher--just what was to be done. The expectation of the researcher was that these responsibilities were or would be accomplished by middle management. Middle management, however, was in conflict about support of the study. In a hierarchical organization such as the Army, middle management usually has some

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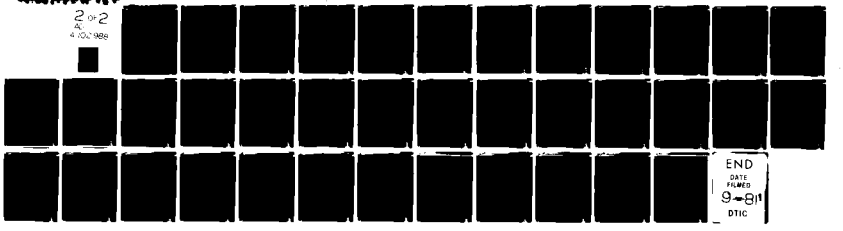

latitude in fulfilling command level expectations, while people at the operational level usually do what they are told to do. Very often, a headquarters, centrally located, orders the dissemination or implementation of changes to all elements of its command. The field elements sometimes feel that they are without support, advice or information about the "why" and "how" of such changes--they only know that some sort of change has to take place within their jurisdiction by a specified date that will satisfy headquarters. If they lack detailed guidance, the interpretation of what will "satisfy" headquarters is local and no uniformity exists in the interpretation. Since the Army command level had specified continued operation of the experimental courses, and the operational level people certainly did not have the authority to contradict that mandate, the fact that the courses and data collection were not continued seems to have resulted from a middle management decision. During the follow-up visit seven months after the study, it was discovered that some of the experimental course materials had been revised back to conventional methods as soon as trainees in the experimental course had completed the modules. There does not appear to have been an intent on the part of at least some of the middle management to carry out the command dictate.

The greatest concern about resistance in the study had focused on the facilitators. An assumption had been made that middle management would support the study, fully, especially since they had evaluated possible approaches and had selected the approach of this study. Clearly, more effort should have been expended on the training and orientation of middle management regarding the purposes of the study and procedures to be followed.

McGuire (1969) stated that if there is ambiguity about the credibility of the communicator, the greater the attempt at change, the greater the resistance. Hovland et al.(1953) also pointed out the importance of communicator credibility and charismatic qualities. The researcher, because of prior experience, had an acceptable level of credibility with middle and upper management levels. There was, however, some ambiguity among course personnel about the researcher's credibility, which was not helped by the communication gaps between the researcher and the facilitators created by the unclarified goals of USAMPS. There was also an apparent lack of communication within USAMPS. On several occasions, the researcher was contacted by different Departments for help on resolution of problems related to the development or implementation of another, entirely different training program. It was their understanding that the study included all USAMPS training programs. Another communication gap and a source of much ill feeling among the facilitators was the fact that they were not all made aware that the changes in course content were a result of USAMPS decision. The impression of most, if not all, of the facilitators was that the researcher was arbitrarily changing course content as well as procedures and course structure. One of the major problems encountered in the change process is the feeling on the part of those people who must "live with" the change that the change is arbitrary and that they have no personal input to (and, therefore, no investment in) the nature and method of change. An attempt had been made to avoid this problem in the present study by soliciting continuous input from all echelons concerned.

According to Cohen (1964) and McGuire (1969), degree of

public commitment greatly influences positive change and Lyons (1966) points out the need for command interest. Throughout the study, assurance was offered that the command within and above USAMPS was willing to lend its full support. As a policy, the intention of support was evident. In effect, however, support was erratic and, in some instances, self-defeating. A more subtle indication of "support" of the study was the last minute replacement of the NCO in charge (NCOIC) of the 95C course. The NCOIC who had participated in the development of the experimental course materials and management plan and who fully understood and supported the experimental course was replaced with a facilitator who, while fully competent in his field, had had no contact with the study prior to his assignment as NCOIC. This change of personnel turned out to be a good test of the management plan. With the plan and a little flexibility, the new NCOIC conducted the 95C course in a successful fashion, providing some support to the notion that the course could be exported to other locations and operated by relatively untrained personnel.

An additional problem in the introduction of change through a change agent is that if the agent operates/manages the new program during the evaluation phase, the data may not represent realistically the ability of the new program to function in the normal operational setting. To obtain realistic data on the viability of the experimental courses, implementation and operation of the courses was carried out by on-site management and instructional staff with the researcher available to provide guidance as it was required. It might have been better if the researcher had not been on-site. In the absence of ready help, the facilitators might have been forced to

turn to use of the management plans and Guides. In the present study, however, neither course was run in full accordance with the management plans provided.

Relating this study to previous findings, two of Niehoff's (1967) four criteria for change were present: the adaptation to local "cultural" patterns and the use of local leadership. Not present in the study were positive motivation and effective communication.

The current study had all of the characteristics cited by Lyons (1966) as necessary for successful implementation in the U. S. Army--timeliness, command interest, a specific product with supporting documentation that had been accepted by other agencies, and promotion by a research agency. Of these six characteristics, however, the timeliness of the study and the fact that self-pacing (the innovation) had been used successfully and had been accepted by other commands within the Army and in the civilian sector may not have been conveyed adequately to the facilitators and to USAMPS. The current study also apparently had an abundance of threat to facilitators' perceptions of their competency and their traditional approach to training (Lyons, 1966).

In a review of Guba's (1968) techniques for reaching potential adopters of an innovation, the lack of researcher involvement in the training of facilitators and middle management once again becomes a prominent factor. All other factors were present: the adopters were told about the innovation, they were shown, they were helped, they were involved, and they were provided with appropriate interventions.

The six steps suggested by McClelland (1972) and Bushnell (1974) were followed in the current study. The problem was diagrammed;

objectives and criteria of effectiveness were formulated; constraints and needed resources were identified; potential solutions were selected and evaluated; and the selected alternative was implemented. In fact, evaluation of alternative solutions to the specified problem and selection of the problem solution contained in this study were effected by USAMPS. Apparently, their criteria and long-range goals differed from those of the training command.

Implications

The experimental 95B course should be re-evaluated with closely monitored use of the specified management plans. The experimental 95C course should be subjected to additional iterations with the course fully integrated into the operational setting. With continued operation of the experimental courses, it may be assumed that the dissonance regarding the courses that was evidenced by the facilitators would be resolved as the courses became less experimental and more customary to them. Additional iterations of the courses should be monitored to determine: 1) whether or not the dissonance is resolved; and 2) if it is resolved, at what point in time and under what conditions resolution is evident.

Additional research might focus on the specific effects on trainee motivation and performance of such things as the subjective experience in the Day in Confinement segment introduced in the experimental 95C course and the emphasis on Community Relations, Professionalism and Ethics introduced in the experimental 95B course. The learning experiences/skills involved in these segments are subjective and should be explored accordingly.

To clarify the value and influence of prior information related to facilitator acceptance of experimental programs, the Facilitator Training Program should be conducted as it was designed, data should be collected on facilitator performance in the Program and a baseline established prior to any further iterations of the experimental courses evaluated in this study.

This study suggests that in hierarchical organizations, particular attention should be paid to the role of middle management in the process of effecting institutional change. One of the problems with the current study was the number of institutional variables outside of the research design and over which the researcher had no control--e.g., conflicting goals within the institution, competition, counter-productive autonomies. As a result, two basic questions for research emerged: 1) how does the institution function; and 2) how should this functioning be approached when change is being introduced? To narrow the universe of institutional variables, key levels within the institution need to be identified, along with those factors that distinguish one level from another. Functions within and between levels also need to be studied--how and by whom are decisions made, who is considered an expert, what are the channels and modes of communication, what are the factors influencing behavior at different levels? In a military setting or a structured organization, the assumption may be that these issues are defined by policy and are, therefore, interpreted clearly. This study suggests that factors affecting interpretation within the institution need to be studied in order to determine the kinds of techniques that may be required within and between different institutional levels in order to facilitate the process of change.

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APPENDIX A

INVENTORY OF INSTRUCTIONAL MATERIALS FOR EXPERIMENTAL COURSES

Experimental 95B Course

Management Information (5 pages)
Student Module Control Sheets (8 pages)
Student Course Control Sheet (1 page)
Student Learning Guide--Introduction (3 pages)
Operate a Law Enforcement Vehicle Lesson Book #1--Tactical FM Radio Operation and Maintenance (16 pages)
Readiness Review for LB #1 (2 pages)
Performance Test for LB #1 (5 pages)
Operate a Law Enforcement Vehicle Lesson Book #2--Law Enforcement Vehicle Operation and Maintenance (15 pages)
Performance Test for LB #2 (8 pages)
Module: Physical Security
Student Learning Guide (3 pages)
Lesson Book #1--Inventory of Badges (8 pages)
Lesson Book #2--Process a Visitor Into or Out of a Controlled Entry Area (8 pages)
Lesson Book #3--Process an Employee Into or Out of a Controlled Area (8 pages)
Lesson Book #4--Process a Package Into or Out of a Controlled Entry Area (10 pages)
Lesson Book #5--Process a Vehicle Into or Out of a Controlled Entry Area (11 pages)
Readiness Review for LBs #1, 2, 3, 4 & 5 (4 pages)
Performance Test for LBs #1, 2, 3, 4 & 5 (8 pages)
Lesson Book #6--Patrol a Controlled Area (4 pages)
Readiness Review for LB #6 (3 pages)
Performance Test for LB #6 (4 pages)
Module: Combat Operations
Student Learning Guide (3 pages)
Lesson Book #1--Conduct a Hasty Route Reconnaissance (9 pages)
Paper and pencil Test for LB #1 (2 pages)
Lesson Book #2--Conduct a Convoy Escort (6 pages)
Paper and pencil Test for LB #2 (2 pages)
Lesson Book #3--Process a Prisoner of War (15 pages)
Paper and pencil Test for LB #3 (4 pages)
Lesson Book #4--Secure and Defend a Division Main Command Post (7 pages)
Paper and pencil Test for LB #4 (2 pages)
Lesson Book #5--Perform as Special Weapons Security Guard (7 pages)
Paper and pencil Test for LB #5 (4 pages)
Module: Traffic Control
Student Learning Guide (3 pages)
Lesson Book #1--Point Control of Traffic (34 pages)
Readiness Review for LB #1 (2 pages)
Performance Test for LB #1 (3 pages)
Lesson Book #2, Part 1--Traffic Violations (28 pages)
Lesson Book #2, Part 2--Traffic Citations (32 pages)
Readiness Review for Lesson Book #2 (3 pages)

Lesson Book #3--Completing DD Form 1920, Alcoholic Influence Report (17 pages)
Lesson Book #4--Testify in Court (5 pages)
Module Performance Test (8 pages)

Module: Traffic Accident Investigation
Student Learning Guide (2 pages)
Lesson Book #1--Respond to Report of Traffic Accident (6 pages)
Lesson Book #2--Secure the Scene of the Accident (6 pages)
Lesson Book #3--Interview Drivers and Witnesses (4 pages)
Lesson Book #4--Obtain and Record Data (23 pages)
Job Aid for LB #4 (4 pages)
Lesson Book #5--Clear the Accident Scene (6 pages)
Module Readiness Review (2 pages)
Module Performance Test (5 pages)

Module: Crime Scenes
Student Learning Guide (3 pages)
Lesson Book #1--Crime Scene Protection (11 pages)
Readiness Review 1 for LB #1 (3 pages)
Readiness Review 2 for LB #1 (3 pages)
Lesson Book #2--Apprehend Law Violators (10 pages)
Lesson Book #3--Transport Apprehended Subject (8 pages)
Readiness Review for LBs #2 & 3 (3 pages)
Lesson Book #4--DA Form 3881 (14 pages)
Lesson Book #5--DA Form 2823 (13 pages)
Lesson Book #6--DA Form 4137 (11 pages)
Lesson Book #7--DA Form 3975 (22 pages)
Job Aid for LB #7 (2 pages)
Lesson Book #8--Question Persons Involved in Incident (6 pages)
Module Performance Test (17 pages)

Module: Other Incidents
Student Learning Guide (3 pages)
Lesson Book #1--Bomb Threat (6 pages)
Lesson Book #2--Alarm Alert (6 pages)
Lesson Book #3--Domestic Disturbances (8 pages)
Lesson Book #4--Apprehend Known Felon in Vehicle (9 pages)
Lesson Book #5--Suspicious Activity (15 pages)
Lesson Book #6--MP Patrol Activity Report (8 pages)
Module Performance Test (13 pages)

Audio-Visual Scripts

Introductory Instructional Segment--Perform Before-, During-, and After-Operation Checks and Operator Maintenance on Tactical FM Radio Equipment and Operate Radio (7 pages)

Traffic Accident Investigation (11 pages)

Crime Scene Investigation (15 pages)

Traffic Control--Point Control of Traffic (4 pages)

MP Notebook (17 pages)

Physical Security--Gate Guard at a Gate to a Controlled Entry Area and Patrol a Controlled Entry Area (9 pages)

Combat Operations--Special Weapons Guard (6 pages)

Support Skills:

Community Relations, Professionalism and Ethics (13 pages)
DOD Date (6 pages)
MP Notebook (12 pages)
Determine Probable Cause (7 pages)
Determine When to Use Deadly Force (5 pages)
Hand Irons (4 pages)
Wall and Stand Up Search (9 pages)
Maintain and Wear Individual MP Equipment and Stand Guard-Mount (5 pages)
Maintain and Wear Individual MP Equipment and Stand Guard-Mount--Performance Test (3 pages)

Experimental 95C Course

Management Information (10 pages)
Student Learning Guide for Introductory Instructional Segments (1 page)

Module: Receive and Process

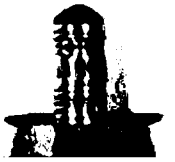
Student Learning Guide (3 pages)
Lesson Book #1--Review Confinement Order and Verify Prisoner's Identification (12 pages)
Lesson Book #2--Segregate Property and Conduct Strip Search (6 pages)
Readiness Review (2 pages)
Performance Test (5 pages)

Module: Movement and Control

Student Learning Guide (3 pages)
Lesson Book #1--Guard Moving Prisoners by Foot (9 pages)
Lesson Book #2--Armed or Unarmed Guard Moving a Prisoner by Quarter-Ton Truck or Sedan (6 pages)
Readiness Review for LBs #1 and 2 (2 pages)
Performance Test for LBs #1 and 2 (4 pages)
Lesson Book #3--Armed and Unarmed Guard Moving Prisoners by Open Bed Truck (6 pages)
Readiness Review for LB #3 (2 pages)
Performance Test for LB #3 (3 pages)
Lesson Book #4--Visiting Room (4 pages)
Readiness Review for LB #4 (2 pages)
Performance Test for LB #4 (5 pages)
Lesson Book #5--Escort Within the Confinement Facility (4 pages)
Readiness Review for LB #5 (2 pages)
Performance Test for LB #5 (4 pages)

Module: Maintain Security

Student Learning Guide (4 pages)
Lesson Book #1--Segregation Area (6 pages)
Readiness Review for LB #1 (2 pages)
Performance Test for LB #1 (5 pages)
Lesson Book #2--Dormitory Guard (15 pages)
Readiness Review for LB #2 (3 pages)
Performance Test for LB #2 (5 pages)



Lesson Book #3--Tower Guard (5 pages)
Readiness Review for LB #3 (2 pages)
Performance Test for LB #3 (5 pages)
Lesson Book #4--Dining Facility Guard (5 pages)
Readiness Review for LB #4 (2 pages)
Performance Test for LB #4 (4 pages)
Lesson Book #5--Sally Port Guard (8 pages)
Readiness Review for LB #5 (2 pages)
Performance Test for LB #5 (5 pages)
Lesson Book #6--Turn Key (6 pages)
Readiness Review for LB #6 (2 pages)
Performance Test for LB #6 (5 pages)
Lesson Book #7--Main Gate Guard (7 pages)
Readiness Review for LB #7 (2 pages)
Performance Test for LB #7 (6 pages)
Lesson Book #8--Pedestrian Gate Guard (7 pages)
Readiness Review for LB #8 (2 pages)
Performance Test for LB #8 (5 pages)

Audio-Visual Scripts

Movement and Control--Escorting Prisoners by Foot, Jeep, Sedan and Truck; Handling Prisoner Escapes

Maintain Security--Dormitory Guard, Segregation Area Guard, and Dining Facility Guard

Maintain Security--Tower Guard, Main Gate Guard, Sally Port Guard and Pedestrian Gate Guard

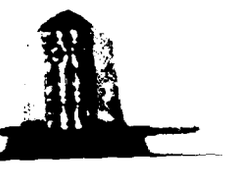
Receive and Process

Contraband, Frisk Search and Observation/Disciplinary Reports

Prisoner Passes

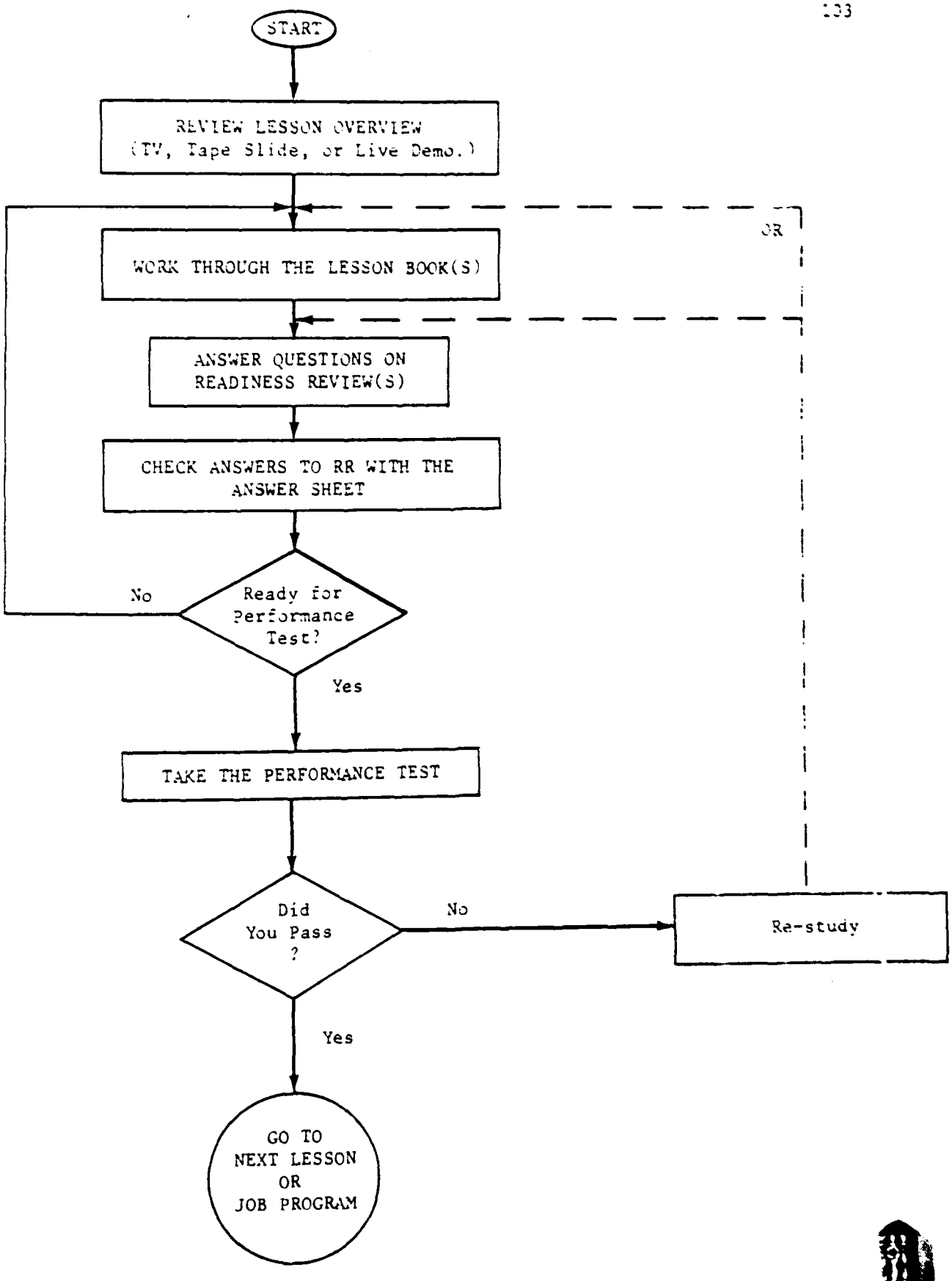
Support Skills:

Recognizing Contraband Items (3 pages)
Reports of Observations/Disciplinary Infractions (14 pages)
Disobedient Prisoners and Escape Attempts (7 pages)
Prisoner Passes (13 pages)
Frisk Search (4 pages)
Priorities of Force (5 pages)
Performance Test for Priorities of Force (2 pages)
Hand Irons (4 pages)



APPENDIX B

TRAINEE LESSON PROCEDURES IN A MODULE


START
REVIEW LESSON OVERVIEW
(TV, Tape Slide, or Live Demo.)
OR
WORK THROUGH THE LESSON BOOK(S)
ANSWER QUESTIONS ON
READINESS REVIEW(S)
CHECK ANSWERS TO RR WITH THE
ANSWER SHEET
No
Ready for
Performance
Test?
Yes
TAKE THE PERFORMANCE TEST
Did
You Pass
?
No
Re-study
Yes
GO TO
NEXT LESSON
OR
JOB PROGRAM

APPENDIX C

TRAINEE QUESTIONNAIRE--95B

TRAINEE QUESTIONNAIRE--95B

Check one answer for each question which is closest to the way you feel about your Military Policeman training.

	CONVENTIONAL	EXPERIMENTAL	X^2	Sig.
1. Were you allowed to take a performance test when you thought you were ready?				
Always	94	51	14.423	.01
Almost Always	48	47		
Average	15	16		
Seldom	2	9		
Never	2	0		
2. Were the performance tests complete checks on what you were taught?				
Very complete	67	37	34.453	.001
Somewhat complete	68	40		
Average	21	13		
Somewhat incomplete	5	27		
Very incomplete	0	6		
3. Were you allowed to go through the course as fast as you could learn?				
Always	63	43	1.676	
Almost Always	47	35		
Average	27	24		
Seldom	21	20		
Never	3	1		
4. Do you feel other trainees were allowed to go through the course as fast as they could learn?				
Always	51	31	1.967	
Almost Always	47	40		
Average	40	36		
Seldom	21	14		
Never	1	1		
5. After driver training, how often do trainees move ahead by themselves rather than as a group?				
Always	43	24	1.986	
Almost Always	67	54		
Average	45	41		
Seldom	6	3		
Never	0	1		

	CONVENTIONAL	EXPERIMENTAL	X^2	Sig.
6. Is the trainee who needs more time to learn given the additional time to get ready for the performance test?				
Always	52	58	14.671	.01
Almost Always	57	47		
Average	33	13		
Seldom	19	4		
Never	0	0		
7. How was the motivation and morale of the trainees during the course?				
Very high	14	1	111.026	.001
High	70	11		
Average	63	29		
Low	12	51		
Very low	2	29		
8. How often were the instructors helpful with the practical exercises & questions or problems you had with the instructional materials?				
Always	58	9	67.031	.001
Almost Always	62	33		
Average	34	44		
Seldom	5	34		
Never	0	3		
9. How often did the instructors show interest in the trainees' learning and performance?				
Always	33	7	55.501	.001
Almost Always	58	15		
Average	50	49		
Seldom	16	49		
Never	2	3		
10. How often did the instructors work individually with the trainees?				
Always	15	6	32.522	.001
Almost Always	42	9		
Average	56	35		
Seldom	41	62		
Never	5	11		
11. How helpful were the practical exercises in preparing you for the tests?				
Very helpful	80	26	32.297	.001
Helpful	59	53		
Somewhat helpful	17	34		
Unhelpful	2	7		
Very unhelpful	1	2		

	CONVENTIONAL	EXPERIMENTAL	X^2	Sig.
12a. Was the learning environment crowded during the course?				
Yes	129	97	0.0	
No	32	24		
12b. If it was crowded, how often did it interfere with your studying?				
Always	13	7	7.844	
Almost Always	37	44		
Average	57	34		
Seldom	20	12		
Never	2	0		
13a. Was the learning environment noisy during the course?				
Yes	86	78	2.857	
No	75	45		
13b. If it was noisy, how often did it interfere with your studying?				
Always	9	11	15.053	.01
Almost Always	23	38		
Average	31	23		
Seldom	21	6		
Never	2	0		
14. How often was your study of the instructional materials rushed or interfered with by "Mickey Mouse" requirements?				
Always	11	21	10.982	.05
Almost Always	31	29		
Average	54	36		
Seldom	41	25		
Never	24	10		
15. How often did you have to wait for training during the course?				
Always	5	2	7.962	
Almost Always	21	16		
Average	55	61		
Seldom	63	35		
Never	16	8		
16. How often did you have to wait for assistance?				
Always	1	2	14.022	.01
Almost Always	17	22		
Average	49	53		
Seldom	78	40		
Never	16	5		

	CONVENTIONAL	EXPERIMENTAL	χ^2	S.L.
17. How often did you have to wait for testing?				
Always	9	10	-.069	
Almost Always	40	29		
Average	51	[illegible]		
Seldom	47	32		
Never	14	5		

18. How well prepared are you to perform the skills you were learning in each of the following areas:

	CONVENTIONAL			EXPERIMENTAL				
SKILL	VERY WELL	WELL	NOT WELL	VERY WELL	WELL	NOT WELL	X^2	Sig.
A.	43	105	10	32	85	6	0.365	
B.	30	90	41	28	69	26	1.137	
C.	62	93	6	61	60	2	4.115	
D.	95	64	1	99	24	0	14.678	.001
E.	55	86	16	59	40	4	10.167	.01
F.	52	102	6	51	65	7	3.507	
G.	31	81	45	29	66	25	2.412	
H.	65	87	9	52	64	7	0.115	
I.	95	62	4	78	43	2	0.703	
J.	13	43	94	88	27	7	132.816	.001
K.	33	90	35	63	45	9	38.500	.001
L.	73	84	1	52	70	1	0.448	
M.	16	69	72	40	76	5	65.356	.001
N.	28	97	34	35	73	15	7.053	.05
O.	57	101	2	44	71	8	5.767	
P.	72	85	3	46	71	4	1.749	
Q.	45	89	24	34	77	11	2.643	
R.	55	95	7	46	72	5	0.177	
S.	23	93	38	27	83	13	9.796	.01
T.	37	102	15	41	76	5	5.365	
U.	47	102	7	52	64	6	4.944	
V.	50	93	13	37	64	20	4.432	
W.	67	78	10	59	54	9	1.007	
X.	87	67	2	91	31	0	11.326	.01
Y.	98	59	0	91	31	1	5.929	
Z.	58	93	5	48	69	5	0.346	
A.A.	53	90	13	63	57	2	12.364	.01
B.B.	51	97	9	33	65	23	11.840	.01
C.C.	49	39	17	46	63	12	1.235	
D.D.	63	92	1	58	60	3	3.578	
E.E.	60	92	4	64	55	3	5.509	
F.F.	68	85	3	67	55	0	5.358	
G.G.	62	83	11	70	49	3	9.456	.01
H.H.	47	91	18	68	52	2	23.464	.001
I.I.	42	103	11	53	67	2	11.136	.01
J.J.	65	83	8	62	56	4	2.528	

Item #18--Key to Skill List

A. Community relations, professionalism, and ethics
B. Unarmed self defense
C. Weapons qualification
D. Vehicle driving
E. Vehicle maintenance
F. Radio operation
G. Radio maintenance
H. Traffic accident investigation
I. Point control traffic
J. Speed gun operation
K. Pace speeding vehicles
L. Complete violation notices
M. Testify in court
N. Conduct hasty route reconnaissance
O. Process and guard PWs
P. Escort convoys
Q. Secure and defend a division main command post
R. Perform as controlled area gate guard
S. Perform as special weapons security guard
T. Patrol a controlled entry area
U. Respond, report estimate and secure crime scene
V. Determine probable cause for apprehension
W. Determine when to use deadly force
X. Search subjects
Y. Advise subject of rights
Z. Interview witnesses, victims and subjects
A.A. Complete sworn statements
B.B. Collect and process evidence
C.C. Transport subjects
D.D. Prepare MP report
E.E. Respond to bomb threats
F.F. Respond to alarms
G.G. Respond to domestic disturbance
H.H. Apprehand known felon
I.I. Detect suspicious activities
J.J. Record information in MP notebook

APPENDIX D

TRAINEE QUESTIONNAIRE--95C

TRAINEE QUESTIONNAIRE--95C

Check one answer for each question which is closest to the way you feel about your Corrections Specialist training.

	CONVENTIONAL	EXPERIMENTAL	X^2	Sig.
1. Were you allowed to take a performance test when you thought you were ready?				
Always	22	10	11.71	.02
Almost Always	12	22		
Average	3	10		
Seldom	1	3		
Never	1	1		
2. Were the performance tests complete checks on what you were taught?				
Very complete	21	22	5.63	
Somewhat complete	15	13		
Average	3	6		
Somewhat incomplete	0	4		
Very incomplete	0	1		
3. Were you allowed to go through the course as fast as you could learn?				
Always	13	10	4.52	
Almost Always	6	13		
Average	12	12		
Seldom	2	6		
Never	6	5		
4. Do you feel other trainees were allowed to go through the course as fast as they could learn?				
Always	9	5	5.73	
Almost Always	11	14		
Average	13	17		
Seldom	0	4		
Never	6	5		
5. Is the trainee who needs more time to learn given the additional time to get ready for the performance test?				
Always	16	34	18.07	.01
Almost Always	10	11		
Average	6	0		
Seldom	5	0		
Never	1	0		

	CONVENTIONAL	EXPERIMENTAL	X^2	Sig.
6. How was the motivation and morale of the trainees during the course?				
Very high	12	3	14.45	.01
High	16	18		
Average	10	18		
Low	0	6		
Very low	1	0		
7. How often were the instructors helpful with the practical exercises & questions or problems you had with the instructional materials?				
Always	33	33	2.58	
Almost Always	6	10		
Average	0	2		
Seldom	0	0		
Never	0	0		
8. How often did the instructors show interest in the trainees' learning and performance?				
Always	28	32	2.05	
Almost Always	9	8		
Average	2	5		
Seldom	0	1		
Never	0	0		
9. How often did the instructors work individually with the trainees?				
Always	18	14	3.17	
Almost Always	8	11		
Average	11	15		
Seldom	1	4		
Never	1	2		
10. How helpful were the practical exercises in preparing you for the tests?				
Very helpful	26	21	4.77	
Helpful	9	16		
Somewhat helpful	4	7		
Unhelpful	0	2		
Very unhelpful	0	0		
11a. Was the learning environment crowded during the course?				
Yes	5	27	18.9	.001
No	34	19		
11b. If it was crowded, how often did it interfere with your studying?				
Always	0	2	1.66	
Almost Always	1	8		
Average	1	8		

	CONVENTIONAL	EXPERIMENTAL	X^2	Sig.
Seldom	2	[illegible]		
Never	1	2		
12a. Was the learning environment noisy during the course?				
Yes	[illegible]	26	13.2	.001
No	32	20		
12b. If it was noisy, how often did it interfere with your studying?				
Always	2	1	[illegible]	
Almost Always	1	[illegible]		
Average	2	13		
Seldom	[illegible]	5		
Never	0	0		
13. How often was your study of the instructional materials rushed or interfered with by "Mickey Mouse" requirements?				
Always	2	1	5.03	
Almost Always	2	[illegible]		
Average	11	6		
Seldom	11	20		
Never	13	16		
14. How often did you have to wait for training during the course?				
Always	0	[illegible]	23.89	.001
Almost Always	1	10		
Average	9	21		
Seldom	20	8		
Never	9	3		
15. How often did you have to wait for assistance?				
Always	0	1	[illegible]	
Almost Always	0	1		
Average	3	9		
Seldom	17	19		
Never	19	16		
16. How often did you have to wait for testing?				
Always	3	11	25.05	.001
Almost Always	4	10		
Average	10	19		
Seldom	13	3		
Never	9	0		

17. How well prepared are you to perform the skills you were learning in each of the following areas:

	CONVENTIONAL			EXPERIMENTAL				
SKILL	VERY WELL	WELL	NOT WELL	VERY WELL	WELL	NOT WELL	X^2	Sig.
A.	12	27	0	14	30	1	0.89	
B.	13	22	3	16	26	3	0.05	
C.	10	17	11	32	10	3	17.44	.001
D.	19	20	0	32	13	0	4.39	.05
E.	14	22	3	29	16	0	8.80	.02
F.	12	24	3	28	16	1	8.62	.02
G.	10	25	4	26	17	2	8.92	.02
H.	11	25	3	29	16	0	12.71	.01
I.	7	22	9	25	19	1	16.27	.001
J.	23	16	0	29	14	2	2.41	
K.	12	24	3	28	17	0	10.22	.01
L.	18	19	1	30	14	1	3.19	
M.	9	27	2	29	15	1	13.80	.01
N.	13	16	10	36	9	0	22.44	.001
O.	13	17	9	33	12	0	18.22	.001
P.	10	19	10	30	15	0	20.04	.001
Q.	16	22	1	27	17	1	3.04	
R.	13	25	1	35	10	0	17.17	.001

Key to Skill List

A. Legal aspects of corrections
B. Interpersonal communications
C. Weapons qualification
D. Receive and process incoming prisoners
E. Sally port guard
F. Main gate guard
G. Tower guard
H. Dormitory guard
I. Turnkey
J. Dining facility guard
K. Pedestrian gate guard
L. Segregation area
M. Priorities of force
N. Armed guard moving prisoners by foot and sedan
O. Armed guard moving prisoners by foot and truck
P. Unarmed guard moving prisoners by foot and jeep
Q. Visiting room procedures
R. Escort within the confinement facility

APPENDIX E

FACILITATOR/MANAGER QUESTIONNAIRE--95B

FACILITATOR/MANAGER QUESTIONNAIRE--95B

In each of the following statements, please check one answer in each column which is closest to the way you feel or is closest to the correct information.

	FAVORED CONVENTIONAL	FAVORED EXPERIMENTAL	BOTH THE SAME
1. How was the motivation and morale of the instructors/facilitators during the course?	59	2	13
2. How heavy was the instructor's workload during the course?	31	23	13
3. Facilities and resources are efficiently used in the course.	51	2	18
4. Instructor's/facilitator's time is efficiently used in the course.	48	2	22
5. If I were in a unit in the field, I would like to have a graduate of this course assigned to my duty section.	46	6	18
6. Were the performance tests complete checks on what the trainees were taught?	42	5	25
7. Were trainees allowed to go through the course as fast as they could learn?	16	14	41
8. Is the trainee who needs more time to learn given the additional time to get ready for the performance test?	12	9	50
9. How was the motivation and morale of the trainees during the course?	57	1	14
10. How often did the instructors work with the trainees individually?	32	4	35

	FAVORED CONVENTIONAL	FAVORED EXPERIMENTAL	BOTH THE SAME
11. How helpful were the practical exercises in preparing trainees for the tests?	39	1	27
12a. Was the learning environment crowded during the course?	15	4	49
12b. If it was crowded, how often did it interfere with trainees' studying?	3	2	27
13a. Was the learning environment noisy during the course?	9	2	59
13b. If it was noisy, how often did it interfere with trainees' studying?	0	0	21

14. How well prepared were trainees to perform the skills they learned in each of the following areas:

SKILL	FAVORED CONVENTIONAL	FAVORED EXPERIMENTAL	BOTH THE SAME
A.	6	1	11
B.	0	0	8
C.	1	0	7
D.	6	0	15
E.	6	0	10
F.	7	0	13
G.	3	0	10
H.	7	0	8
I.	6	0	10
J.	4	0	9
K.	5	0	11
L.	6	0	10
M.	4	0	9
N.	3	1	7
O.	4	0	7
P.	3	0	7
Q.	3	2	5
R.	4	0	7
S.	7	0	6
T.	6	3	4
U.	5	1	6
V.	8	1	7
W.	7	2	5
X.	7	0	9
Y.	7	0	11
Z.	6	0	5
A.A.	4	0	6
B.B.	5	0	5
C.C.	2	2	7
D.D.	5	0	12
E.E.	3	0	10
F.F.	5	0	10
G.G.	3	1	10
H.H.	4	2	7
I.I.	3	0	11
J.J.	4	1	11

See Appendix C for key to skill list

APPENDIX F

FACILITATOR/MANAGER QUESTIONNAIRE--95C

FACILITATOR/MANAGER QUESTIONNAIRE--95C

In each of the following statements, please check one answer in each column which is closest to the way you feel or is closest to the correct information.

	CONVENTIONAL	EXPERIMENTAL	X^2	Sig.
1. How was the motivation and morale of the instructors/facilitators during the course?				
Very high	6	0	17.27	.001
High	6	2		
Average	2	5		
Low	0	8		
Very low	0	0		
2. How heavy was the instructor's workload during the course?				
Very heavy	1	2	5.05	
Heavy	4	7		
Average	9	4		
Light	0	1		
Very light	0	1		
3. Facilities and resources are efficiently used in the course.				
Agree completely	5	1	11.78	.02
Agree moderately	8	4		
Undecided	0	1		
Disagree moderately	1	4		
Disagree completely	0	5		
4. Instructor's/facilitator's time is efficiently used in the course.				
Agree completely	8	2	15.08	.01
Agree moderately	5	3		
Undecided	1	0		
Disagree moderately	0	7		
Disagree completely	0	3		
5. If I were in a unit in the field, I would like to have a graduate of this course assigned to my duty section.				
Agree completely	7	0	25.50	.001
Agree moderately	7	1		
Undecided	0	1		
Disagree moderately	0	1		
Disagree completely	0	12		
6. Were the performance tests complete checks on what the trainees were taught?				
Very complete	7	1	12.28	.01
Somewhat complete	6	4		

	CONVENTIONAL	EXPERIMENTAL	X^2	Sig.
Average	0	1		
Somewhat incomplete	1	9		
Very incomplete	0	0		
7. Were trainees allowed to go through the course as fast as they could learn?				
Always	3	1	9.13	
Almost always	1	6		
Average	3	5		
Seldom	2	3		
Never	4	0		
8. Is the trainee who needs more time to learn given the additional time to get ready for the performance test?				
Always	3	12	10.16	.02
Almost always	7	2		
Average	3	1		
Seldom	0	0		
Never	1	0		
9. How was the motivation and morale of the trainees during the course?				
Very high	4	0	20.26	.001
High	7	0		
Average	3	8		
Low	0	7		
Very low	0	0		
10. How often did the instructors work with the trainees individually?				
Always	4	2	5.23	
Almost always	5	3		
Average	5	6		
Seldom	0	4		
Never	0	0		
11. How helpful were the practical exercises in preparing trainees for the tests?				
Very helpful	10	2	14.41	.01
Helpful	3	4		
Somewhat helpful	0	4		
Unhelpful	0	5		
Very unhelpful	0	0		
12a. Was the learning environment crowded during the course?				
Yes	7	15	9.88	.01
No	7	0		

	CONVENTIONAL	EXPERIMENTAL	X^2	Sig.
12b. If it was crowded, how often did it interfere with trainees' studying?				
Always	0	1	2.33	
Almost always	3	7		
Average	2	6		
Seldom	2	1		
Never	0	0		
13a. Was the learning environment noisy during the course?				
Yes	2	9	7.10	.01
No	11	5		
13b. If it was noisy, how often did it interfere with trainees' studying?				
Always	0	1	0.92	
Almost always	1	3		
Average	0	2		
Seldom	0	0		
Never	0	0		

14. How well prepared were trainees to perform the skills they learned in each of the following areas:

	CONVENTIONAL			EXPERIMENTAL				
SKILL	VERY WELL	WELL	NOT WELL	VERY WELL	WELL	NOT WELL	X^2	Sig.
A.	3	6	0	0	4	3	6.25	.05
B.	1	9	0	0	7	1	2.05	
C.	0	2	0	2	2	0	1.50	
D.	6	5	0	0	5	4	9.90	.01
E.	7	5	0	0	5	6	12.98	.01
F.	7	5	0	0	5	5	11.92	.01
G.	7	5	0	0	7	3	10.24	.01
H.	7	5	0	0	6	5	12.07	.01
I.	4	7	0	0	5	6	10.33	.01
J.	5	6	0	1	4	4	6.94	.05
K.	5	7	0	0	4	6	11.73	.01
L.	5	6	0	0	4	4	9.16	.02
M.	2	7	0	1	3	3	4.76	
N.	4	6	0	0	6	4	8.00	.02
O.	5	6	0	1	5	4	6.73	.05
P.	5	7	0	0	7	3	7.88	.02
Q.	4	8	0	0	6	3	7.00	.05
R.	4	7	0	0	6	3	6.95	.05

See Appendix D for key to skill list